ATLANTIC TESTING LABORATORIES, LIMITED

Sustaining Member—N.Y.S. Society of Professional Engineers

atl

Box 29
Canton, N.Y. 13617
(315) 386-4578

Box 356
Cicero, N.Y. 13039
(315) 699-5281

April 11, 1986

U. S. Army Corps of Engineers
New England Division
424 Trapelo Road
Waltham, MA 02254-9149

Attn: Chief, Engineering Division, NEDED

Re: Subsurface Investigation
Fort Fairfield, ME
Contract DACW-33-85-D-0011
Delivery Order No. 0009
ATL File No. CD013-1-3-86

Gentlemen:

In accordance with Delivery Order No. 0009, dated 5 March 1986, attached is one final copy of our Engineering Report for the subsurface investigation performed at Fort Fairfield, ME.

By copy of this letter, we are also transmitting two copies of this report to the Chief of the Geotechnical Engineering Branch.

If you have any questions or comments, please do not hesitate to call.

Respectfully submitted,

Spencer F. Thew, P.E./L.S.
President

SFT/TAB/smf

encs.

cc: Chief, Geotechnical Engineering Branch, NEDED-GF (2)

SECTION 1

SUBSURFACE INVESTIGATION
FORT FAIRFIELD, ME

CONTRACT DACW-33-85-D-0011
CONTRACTING OFFICER:
Edward D. Hammond, LTC, CE
28 June 1985

DELIVERY ORDER NO. 0009
5 MARCH 1986

PREPARED FOR: U.S. Army Corps of Engineers
New England Division
424 Trapelo Road
Waltham, MA 02254-9149

PREPARED BY: Theresa A. Beddoe
Atlantic Testing Laboratories, Limited
P. O. Box 29
Canton, NY 13617

March 18, 1986

ATL Report No. CD013-1-3-86

SECTION 2

TABLE OF CONTENTS

SECTION 1 Title Page

SECTION 2 Table of Contents

SECTION 3 Scope of Investigation
- a. Delivery Order
- b. Project Site
- c. Purpose
- d. Authority
- e. Scope of Work

SECTION 4 Quality Control
- a. General Certification Statement
- b. Records Taken
- c. Equipment Used
- d. Procedures

SECTION 5 Summary of Activities and Telephone Log
Table I Summary of Activities
Table II Telephone Log

SECTION 6 Chain of Custody Logs

SECTION 7 Safety Reports

SECTION 8 Field Inspector's Logs
- a. Figure 1 - General Project Map
- b. Figure 2 - Site Location Map
- c. Figure 3 - Boring Location Plan
- d. Boring Logs

SECTION 3

SCOPE OF INVESTIGATION

a. Delivery Order No. 0009

CHECKED BOX APPLIES: [X] ORDER FOR SUPPLIES OR SERVICES

[ ] REQUEST FOR QUOTATIONS NO. RETURN COPY(IES) OF THIS QUOTE BY (THIS IS NOT AN ORDER. See DD Form 1155r)

PAGE 1 OF 2

1. CONTRACT/PURCH ORDER NO.	2. DELIVERY ORDER NO.	3. DATE OF ORDER	4. REQUISITION/PURCH REQUEST NO.	5. CERTIFIED FOR NATIONAL DEFENSE UNDER DMS REG 1 DO
DACW33-85-D-0011	0009	86 MAR 05	GEB 86-28	

6. ISSUED BY: Dept. of the Army
New England Division, Corps of Engineers
424 Trapelo Road
Waltham, MA 02254-9149
Buyer/Symbol: Hebert/NEDSD-P Phone: AC 617/647-8207

7. ADMINISTERED BY: (If other than 6) CODE

8. DELIVERY FOB: [X] DEST [ ] OTHER (See Schedule if other)

9. CONTRACTOR/QUOTER CODE FACILITY CODE

NAME AND ADDRESS:
Atlantic Testing Laboratories, Ltd.
P.O. Box 29
Canton, NY 13617

10. DELIVER TO FOB POINT BY: In Accordance wtih Paragraph 7 of Attachment

11. CHECK IF BUSINESS IS: [X] SMALL [ ] SMALL DISADVANTAGED [ ] WOMEN-OWNED

12. DISCOUNT TERMS: NET

13. MAIL INVOICES TO: Finance & Accounting Officer at issuing office

14. SHIP TO: ~~XXXX~~ Services for: CODE
U.S. Army Engineer Division, New England
ATTN: Geotechnical Engineering Branch
424 Trapelo Road
Waltham, MA 02254-9149

15. PAYMENT WILL BE MADE BY: CODE
Finance & Accounting Officer
at issuing office

MARK ALL PACKAGES AND PAPERS WITH CONTRACT OR ORDER NUMBER

16. TYPE OF ORDER: DELIVERY [X] PURCHASE [ ]

This delivery order is subject to instructions contained on this side of form only and is issued on another Government agency or in accordance with and subject to terms and conditions of above numbered contract. XXXXXXXXXXXXXXXX

Reference your furnish the following on terms specified herein, including, for U.S. purchases.

General Provisions of Purchase Order on DD Form 1155r (EXCEPT CLAUSE NO. 12 APPLIES ONLY IF THIS BOX [ ] IS CHECKED, AND NO. 14 IF THIS BOX [ ] IS CHECKED); special provisions ; and delivery as indicated. This purchase is negotiated under authority of 10 USC 2304(a)(3) or as specified in the schedule if within the U.S., its possessions or Puerto Rico; if otherwise under 2304(a)(6).

[ ] If checked, Additional General Provisions apply; Supplier shall sign "Acceptance" on DD Form 1155r and return copies.

17. ACCOUNTING AND APPROPRIATION DATA/LOCAL USE
96X3122 Construction General
BE81930720E0000 (MC)

SB
GEB
AE/PS Coord
JJH/ckh

18. ITEM LINE	19. SCHEDULE OF SUPPLIES/SERVICES	20. QUANTITY ORDERED/ ACCEPTED*	21. UNIT	22. UNIT PRICE	23. AMOUNT
	Furnish necessary services and equipment to provide subsurface investigations adjacent to Aroostook River for proposed dike improvement project, Ft. Fairfield, ME.	APPROX.			ESTIMATED
1.2	Geotechnical Inspector	84	HR	$40.00	$3,360.00
1.3	Per Diem - overnight stay	9	DAY	45.00	405.00
1.4	Mileage from Waltham, MA and return	800	MI	.35	280.00

* If quantity accepted by the Government is same as quantity ordered, indicate by √ mark. If different, enter actual quantity accepted below quantity ordered and encircle.

24. UNITED STATES OF AMERICA
BY: EDWARD D. HAMMOND
Lt. Colonel, Deputy Division Engineer

25. TOTAL $13,330.00

29. DIFFERENCES

26. QUANTITY IN COLUMN 20 HAS BEEN
[ ] INSPECTED [ ] RECEIVED [ ] ACCEPTED, AND CONFORMS TO THE CONTRACT EXCEPT AS NOTED

DATE SIGNATURE OF AUTHORIZED GOVERNMENT REPRESENTATIVE

27. SHIP. NO. [ ] PARTIAL [ ] FINAL

28. D.O. VOUCHER NO.

30. INITIALS

31. PAYMENT [ ] COMPLETE [ ] PARTIAL [ ] FINAL

32. PAID BY

33. AMOUNT VERIFIED CORRECT FOR

34. CHECK NUMBER

35. BILL OF LADING NO.

36. I certify this account is correct and proper for payment.
DATE SIGNATURE AND TITLE OF CERTIFYING OFFICER

37. RECEIVED AT	38. RECEIVED BY	39. DATE RECEIVED	40. TOTAL CONTAINERS	41. S/R ACCOUNT NUMBER	42. S/R VOUCHER NO.

DD FORM 82 SEP 1155 PREVIOUS EDITION WILL BE USED UNTIL EXHAUSTED.

STANDARD FORM 36, JULY 1966
GENERAL SERVICES ADMINISTRATION
FED. PROC. REG. (41 CFR) 1-16.101
EXCEPTION TO SF 36 APPROVED
BY NARS, MAR 1977

CONTINUATION SHEET

REF NO OF DOC. BEING CONT'D.
Delivery Order 0009 to
Contract No. DACW33-85-D-0011

PAGE 2 OF 2

NAME OF OFFEROR OR CONTRACTOR

CONTRACT ATLANTIC TESTING LABORATORIES

LINE ITEM NO.	SUPPLIES/SERVICES	QUANTITY	UNIT	UNIT PRICE	AMOUNT
		APPROX.			ESTIMATED
2.1	Geotechnical Report	1	JOB	60% of 1.2	$2,016.00
6.1	Mobilization and Demobilization	1	JOB	$700.00	700.00
6.3	Mileage from/to contractor's main equipment storage site	660	MI	1.15	759.00
6.5	Standby time/on site moves	24	HR	75.00	1,800.00
13.1	0 - 30 Ft. depth	36	EA	13.00	468.00
13.2	31 - 50 Ft. depth	2	EA	16.00	32.00
18.1	BX, NX Size	155	LF	18.00	2,790.00
22.3	NWX Size and/or NWM	16	LF	45.00	720.00

ATTACHMENT NO. 1

GEB REQUISITION NO. 86-28, DELIVERY ORDER NO. 0009

CONTRACT NO. DACW 33-85-D-0011

INSPECTION AND EXPLORATION INSTRUCTIONS

PROJECT: Fort Fairfield Local Protection Project

SITE: Fort Fairfield, Maine

AUTHORITY: The Fort Fairfield Local Protection Project is funded under authority of Section 205 of the 1948 Flood Control Act.

PURPOSE: The subsurface investigations are to determine the foundation conditions adjacent to the Aroostook River for the proposed dike improvement project.

1. SCOPE OF INVESTIGATION

a. Locate seven (7) drive sample - SPT borings by means of taping the given distances as indicated on Attachment No. 2. Elevations for the borings will be estimated based on the contours shown on Attachment 2.

b. The seven drive sample - SPT borings shall be driven to the depths as follows: A-32', B-32', C-17', D-12', E-32', F-32', and G-22'. The sampling work shall be in accordance with paragraph 13, page C-21 of the specifications. The entire sample for each SPT drive shall be saved and placed in as many jars as required. Where refusal is encountered before depth is attained in a borehole, the boring shall be continued using vertical diamond core drilling. If the material causing refusal is not penetrated within five feet of the original refusal elevation, the boring shall be terminated. Refusal is defined as 100 blows with a less than 12" penetration or bouncing refusal.

c. A geotechnical inspector shall act as field inspector while performing the borings. The inspector shall provide telephone reports to Mr. Blair, Corps of Engineers, at 617-647-8396 at least once a day.

d. All samples shall be delivered to the Corps of Engineers Headquarters in Waltham, Massachusetts by the field inspector. Sample delivery shall be coordinated with the Director, NED Materials and Water. Quality Laboratory at 617-647-8357/8392.

2. SITE CONDITIONS

The proposed exploration program is adjacent to the Aroostook River in Fort Fairfield, Maine. The proposed explorations are on relatively flat areas, except for possibly FD-C.

3. RIGHTS OF ENTRY

The rights of entry have been obtained from the Town of Fort Fairfield and the Canadian Pacific Railroad (copies attached). The contractor is

responsible for contacting the town and railroad to notify them when the work is to be done. The individuals to be contacted are:

Alphonse R. Dixon
Town Manager
Town of Fort Fairfield
P. O. Box 451
Fort Fairfield, ME 04742
(207) 472-3801

M. S. Andrews
Supt. of Canadian Pacific Railway
Canadian Pacific Railway
Box 3460
Station B
St. John, New Brunswick E 2M4x2
(506) 635-2200

The contractor is also responsible for obtaining a flagman, if one is required by the Canadian Pacific Railway.

4. COORDINATION

Mr. J. Blair, Corps of Engineers, 617-647-8396, shall be contacted five days prior to start of work and at least once a day by the geotechnical inspector to report on how work is progressing and what types of materials are being encountered.

5. EXPLORATION NUMBERS

The drive boring locations as shown on Attachment No. 2 and designated A-G shall be numbered FD-86-7 through FD-86-13 in order of their completion. The new numbers shall be indicated on the boring logs and shown on a plan of explorations.

6. GOVERNMENT REVIEW

The Government will review the draft submittal as well as the completed work. Subsequent to such review, the Contractor shall accomplish any corrections which may be directed as the result of the Government review.

7. COMPLETION SCHEDULE

Services under this delivery order shall start within 15 calender days after receipt of delivery order. Duration of the drilling effort is estimated to be seven work days. The geotechnical report shall be submitted in draft format for review (by the Government), postmarked no later than seven calendar days after completion of the field work. Government review will take approximately ten calendar days from receipt of draft report. The final geotechnical report shall be submitted postmarked no later than seven calendar days after receipt of draft repor with Government comments.

8. QUALITY CONTROL

You will be held responsible for the quality of the maps submitted and for all damages caused the Government as a result of your negligence in the performance of any services furnished under the contract.

Although submissions required by your contract are technically reviewed by the Government, it is emphasized that your work must be prosecuted using proper internal controls and review procedures. The letter of transmittal for each submission which you make shall include a certification that the submission has been subjected to your own review and coordination procedures to insure (a) completeness for each discipline commensurate with the level of effort required for that submission, (b) elimination of conflicts, errors and omissions, and (c) the overall professional and technical accuracy of the submission. Documents which are significantly deficient in any of these areas will be returned to you for correction and/or upgrading prior to our completing our review. Contract submission dates will not be extended if a resubmission of draft material is required for this reason.

DEPARTMENT OF THE ARMY

RIGHT-OF-ENTRY FOR SURVEY AND EXPLORATION

Ft. Fairfield Local Protection Project — Boring FD-A,D,E,F & G

(Project, Installation or Activity) — *(Tract Number or Other Property Identification)*

The undersigned, hereinafter called the "Owner", hereby grants to the UNITED STATES OF AMERICA, hereinafter called the "Government", a permit or right-of-entry upon the following terms and conditions:

1. The Owner hereby grants to the Government an irrevocable right to enter upon the lands hereinafter described at any time within a period of six (6) *months from the date of this instrument, in order to survey, make test borings, and carry out such other exploratory work as may be necessary to complete the investigation being made of said lands by the Government.*

2. The permit includes the right of ingress and egress on other lands of the Owner not described below, provided such ingress and egress is necessary and not otherwise conveniently available to the Government.

3. All tools, equipment, and other property taken upon or placed upon the land by the Government shall remain the property of the Government and may be removed by the Government at any time within a reasonable period after the expiration of this permit or right-of-entry.

4. The Government agrees to be responsible for damages arising from the activity of the Government, its officers, employees, or representatives on said land, in the exercise of rights under this permit or right-of-entry, either by repairing such damage or at the option of the Government by making an appropriate settlement with the Owner in lieu thereof.

5. If aircraft flights over said lands, or entry upon the land by means of helicopter or other type aircraft, are necessary, the Government shall inform the Owner, in advance, of each such flight or entry.

6. The land affected by this permit or right-of-entry is located in the State of Maine *County of* Aroostook *, and is described as follows:* As depicted on the Army Corps of Engineers map entitled "Ft. Fairfield Local Protection - Exploration Plan."

WITNESS MY HAND AND SEAL this 27th *day of* Jan *, 1956*

W B Lindsay *(SEAL)*

For the Canadian Pacific Railway *(SEAL)*

UNITED STATES OF AMERICA

By [signature]

AMENDMENT TO RIGHT-OF-ENTRY

"Railway requires 48 hours' notice prior to commencement of any work to arrange flagging protection, if required and at no time should any equipment be placed closer than 10 feet to the nearest rail of any track."

...cal Protection Project ... Parcel No. ...

...undersigned, hereinafter called the "Owner", hereby grants to the UNITED STATES OF ... hereinafter called the "Government", a permit or right-of-entry upon the following terms ...

1. The Owner hereby grants to the Government an irrevocable right to enter upon the lands hereinafter described at any time within a period of six (6) months from the date of this instrument, in order to survey, make test borings, and carry out such other exploratory work as may be necessary to complete the investigation being made of said lands by the Government.

2. The permit includes the right of ingress and egress on other lands of the Owner not described below, provided such ingress and egress is necessary and not otherwise conveniently available to the Government.

3. All tools, equipment, and other property taken upon or placed upon the land by the Government shall remain the property of the Government and may be removed by the Government at any time within a reasonable period after the expiration of this permit or right-of-entry.

4. The Government agrees to be responsible for damages arising from the activity of the Government, its officers, employees, or representatives on said land, in the exercise of rights under this permit or right-of-entry, either by repairing such damage or at the option of the Government by making an appropriate settlement with the Owner in lieu thereof.

5. If aircraft flights over said lands, or entry upon the land by means of helicopter or other type aircraft, are necessary, the Government shall inform the Owner, in advance, of each such flight or entry.

6. The land affected by this permit or right-of-entry is located in the State of Maine County of Aroostook , and is described as follows: As depicted on the Army Corps of Engineers map entitled "Fort Fairfield Local Protection-Exploration Plan." Land owned by Stephen F. & Elaine E. Novak, Assessor's Map #32, Lot #78. Test boring to be done in west driveway off Main Street, as shown on Corps of Engineers, Water Resources Investigation, St. John River Basin, Aroostook River, July 1983.

7. The test results will be given to the property owner, after drilling is completed.

WITNESS MY HAND AND SEAL this day of , 19

Stephen F. Novak (SEAL)

(SEAL)

UNITED STATES OF AMERICA

By
RICHARD T. BOGACZYK
Chief, Real Estate Division

ENG FORM 1 APR 74 1258 (ER 405-1-625) EDITION OF 1 DEC 62 IS OBSOLETE.

RECEIVED
4
B - 8
1145 - TIME

[illegible] OF-ENTRY FOR [illegible]

[illegible] Local Protection Project — Boring FD-D

(Project, Installation or Activity) — *(Tract Number or Other Property Identification)*

The undersigned, hereinafter called the "Owner", hereby grants to the UNITED STATES OF AMERICA, hereinafter called the "Government", a permit or right-of-entry upon the following terms and conditions:

1. The Owner hereby grants to the Government an irrevocable right to enter upon the lands hereinafter described at any time within a period of six *(* 6 *) months from the date of this instrument, in order to survey, make test borings, and carry out such other exploratory work as may be necessary to complete the investigation being made of said lands by the Government.*

2. The permit includes the right of ingress and egress on other lands of the Owner not described below, provided such ingress and egress is necessary and not otherwise conveniently available to the Government.

3. All tools, equipment, and other property taken upon or placed upon the land by the Government shall remain the property of the Government and may be removed by the Government at any time within a reasonable period after the expiration of this permit or right-of-entry.

4. The Government agrees to be responsible for damages arising from the activity of the Government, its officers, employees, or representatives on said land, in the exercise of rights under this permit or right-of-entry, either by repairing such damage or at the option of the Government by making an appropriate settlement with the Owner in lieu thereof.

5. If aircraft flights over said lands, or entry upon the land by means of helicopter or other type aircraft, are necessary, the Government shall inform the Owner, in advance, of each such flight or entry.

6. The land affected by this permit or right-of-entry is located in the State of Maine *County of* Aroostook *, and is described as follows:* As depocted on the Army Corps of Engineers map entitled "Fort Fairfield Local Protection - Exploration Plan."

Land woned by Gilbert Peterson, Family Trust, Assessor's Map#32, Lot #46.
Test boring to be done as shown on Corps of Engineers, Water Resources Investigation, St. John River Basin, Aroostook River, July 1983.

WITNESS MY HAND AND SEAL this 2nd *day of* December *, 19*85

[signature] – President *(SEAL)*

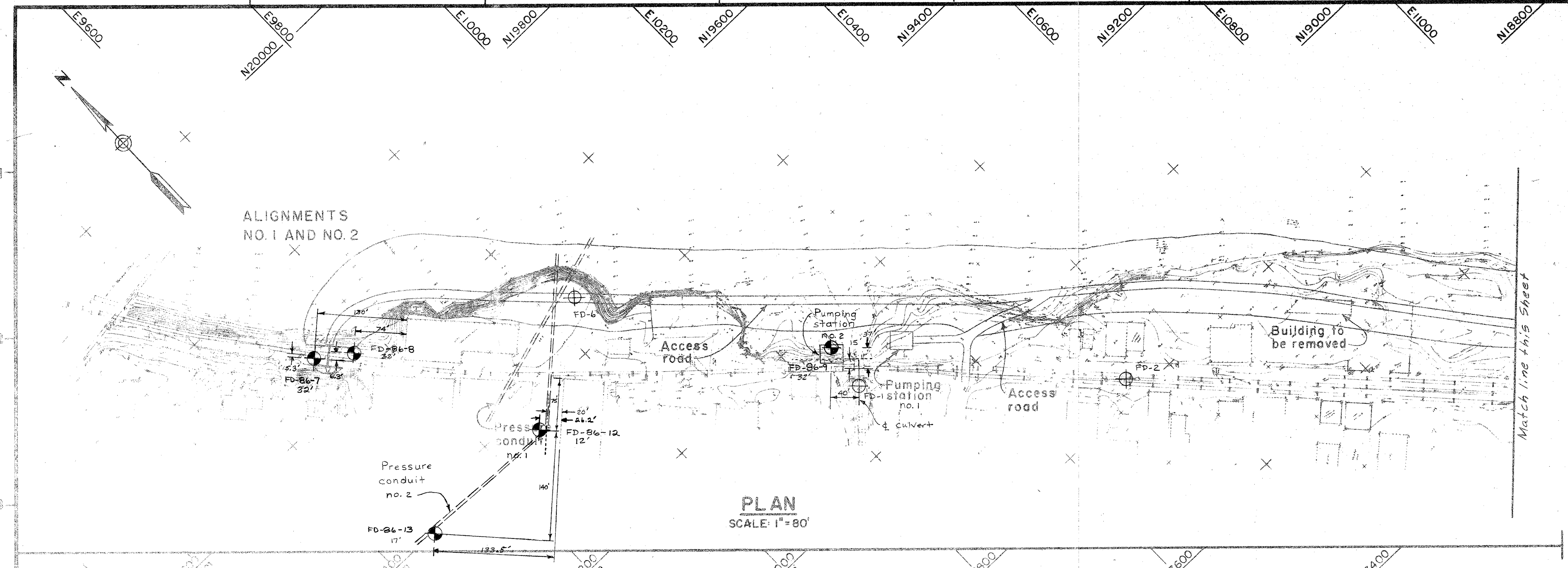
-- *(SEAL)*

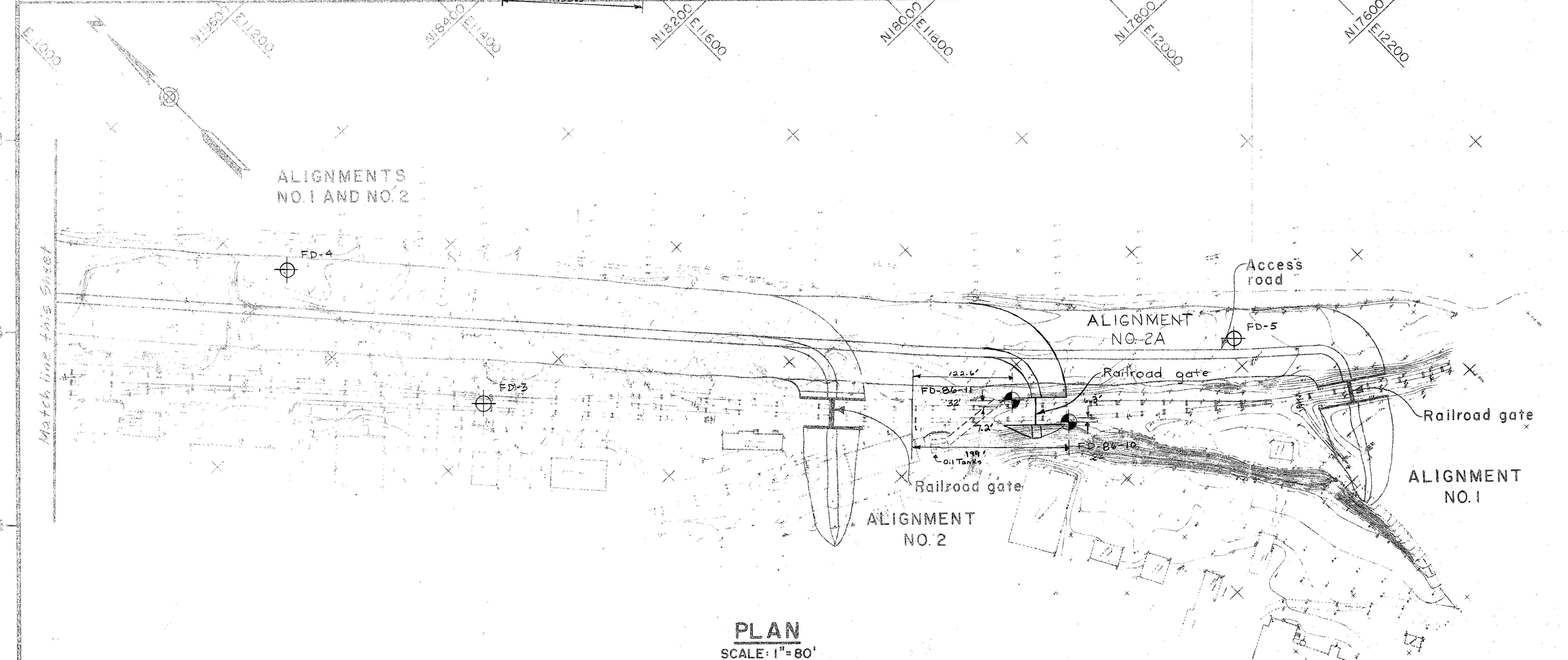
UNITED STATES OF AMERICA

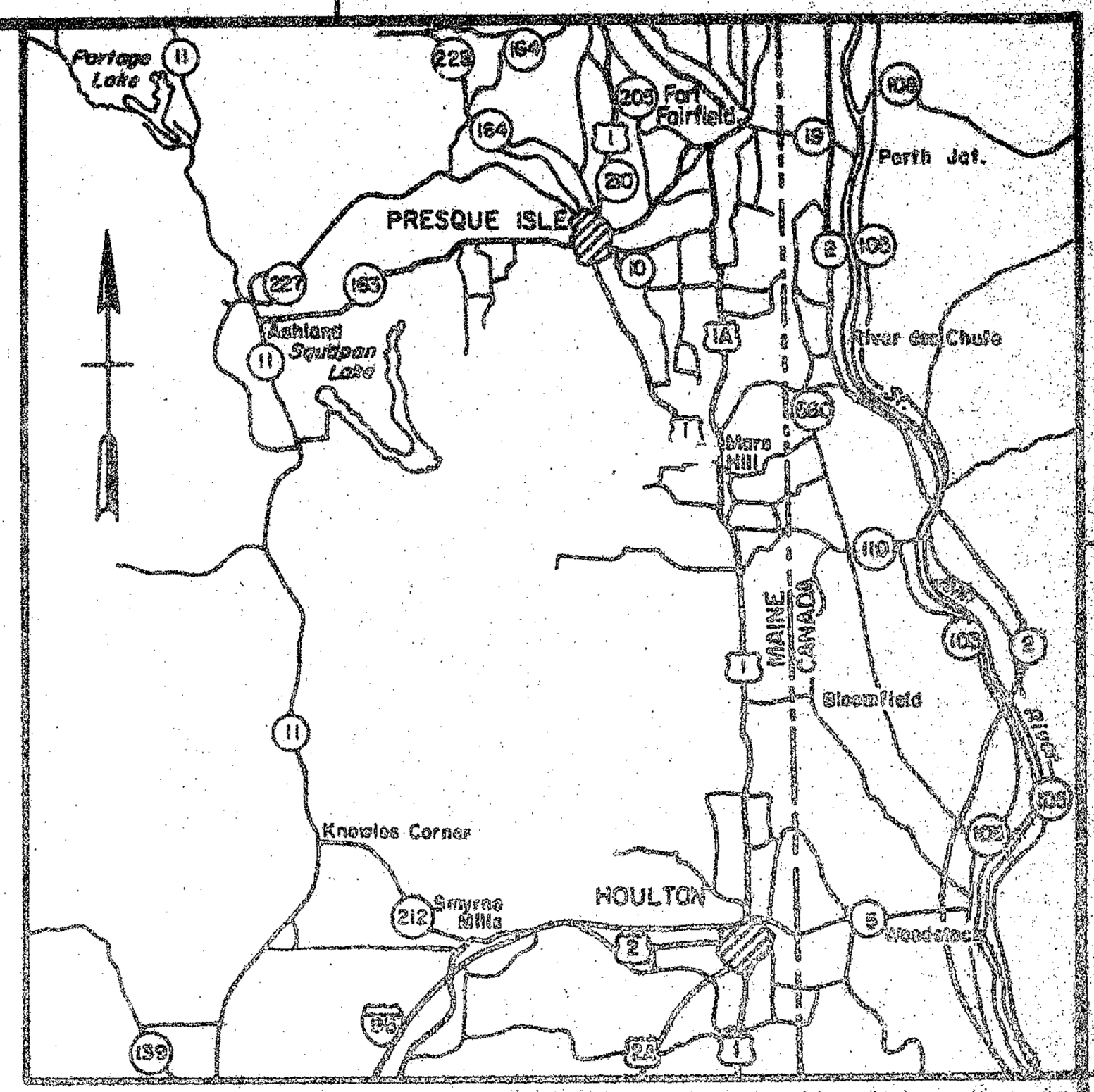
By ______________________________

RICHARD T. BOGACZYK
Chief, Real Estate Division

CORPS OF ENGINEERS | U. S. ARMY



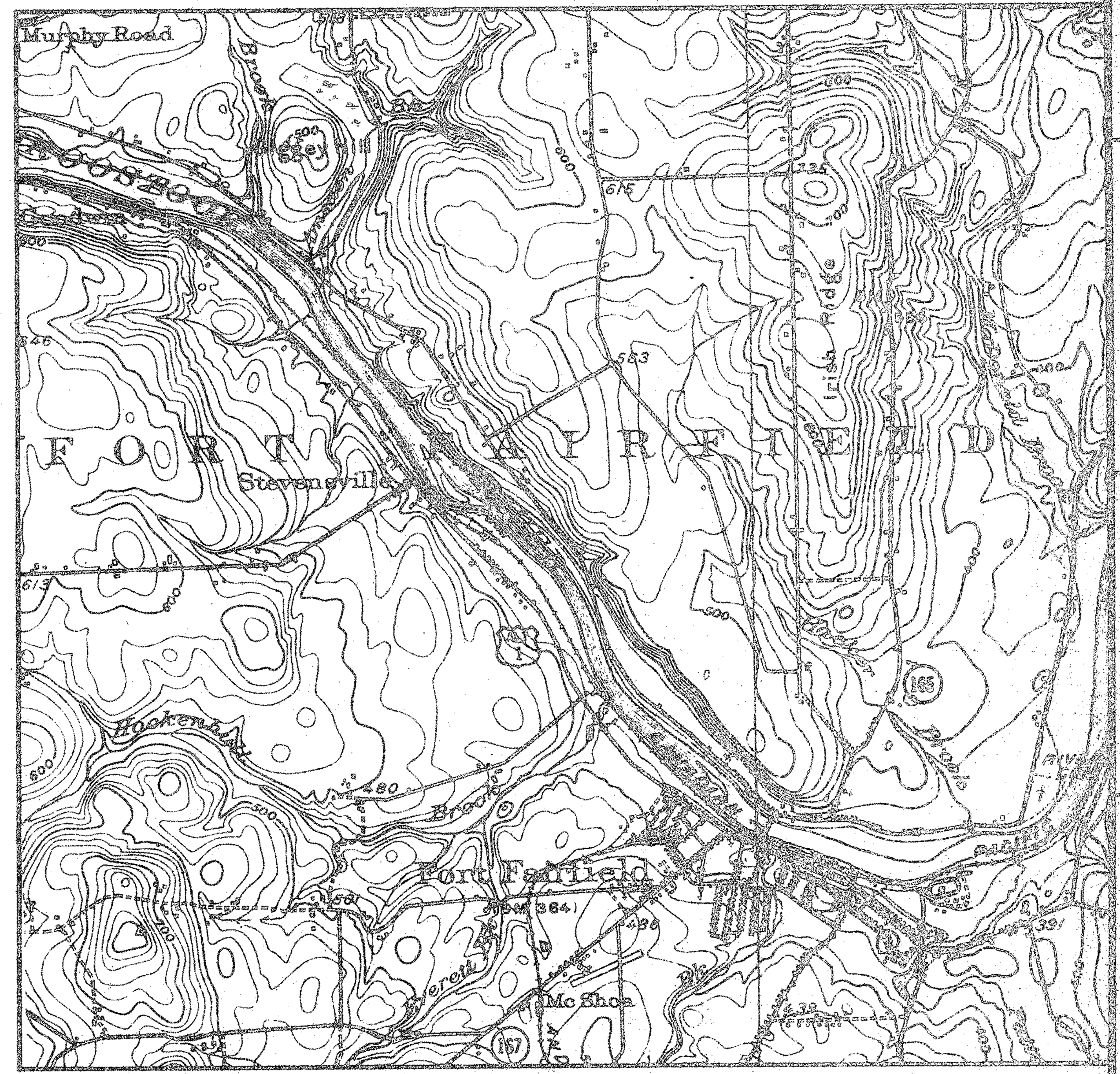




LOCATION MAP

SCALE IN MILES

10 0 10



VICINITY MAP

LEGEND

FD-86-7 / 20' — Exploration Location; Exploration Number; Required Depth of Exploration

FD-1 — Exploration Location (Previous Contract); Exploration Number

- - - - - Water Main / Sewer (at FD-86-12 also a telephone cable)

— - — - — Suspected Location of Piping Used to fill Oil Tanks from Rail Cars on Siding

Note: Plan based on Field Survey by U.S. Army Corps of Engineers, June 1978

GRAPHIC SCALES

1"=80' 80' 0 80' 160'

1"=10' 10' 0' 10' 20'

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION
CORPS OF ENGINEERS
WALTHAM, MASS.

WATER RESOURCES INVESTIGATION

ST. JOHN RIVER BASIN

AROOSTOOK RIVER

FORT FAIRFIELD LOCAL PROTECTION

SCALE AS SHOWN | JULY 1983

NOTE: Base map provided by Corps of Engineers, NED	DRAWN	FIGURE 3 - BORING LOCATION PLAN
	CHECKED	FORT FAIRFIELD, MAINE
	SCALE as noted	CONTRACT DACW-33-83-D-0011 DELIVERY ORDER NO. 0006
	DATE 18 March 86	ATLANTIC TESTING LABORATORIES, Limited P.O. BOX 29, CANTON, NEW YORK (315) 386-4578
PROJECT NUMBER CD013-3-86	DRWNG NO.	CICERO, N.Y. ENDICOTT, N.Y. BURLINGTON, VT. MANCHESTER, N.H.

b. Project Site

The site is located adjacent to the Aroostook River along the Canadian Pacific Rail line in Fort Fairfield, ME.

c. Purpose

The subsurface investigations were to determine the foundation conditions adjacent to the Aroostook River for the proposed dike improvement project.

d. Authority

The Fort Fairfield Local Protection Project is funded under authority of Section 205 of the 1948 Flood Control act.

e. Scope of Investigation

Inspection and exploration instructions, which were provided by the Army Corps of Engineers, New England Division, are included in Section 3a. The subsurface investigation program employed drive sample borings with standard penetration tests.

Work under this delivery order consisted of locating seven (7) drive sample - SPT borings by means of taping the given distances as indicated on Attachment No. 2 of the delivery order (Section 3a). Elevations for the borings were roughly estimated from the contours shown on Attachment 2.

The drive sample - SPT borings were performed in accordance with paragraph 13, page C-21 of the specifications. Sampling intervals were 5 feet in the overburden or less where there was a significant change in the soil strata. The borings were advanced using a 3-1/4" I.D. hollow stem auger. All borings were terminated at the specified depth in overburden. The entire sample for each SPT drive was saved.

SECTION 4

QUALITY CONTROL

a. General Certification Statement

I hereby certify that the above mentioned records, equipment and procedures were used to perform the subsurface exploration described herein. I also certify that the work was performed in a professional manner and meets the requirements set forth in the delivery order. This report has been subject to my review and is both complete and technically accurate.

CERTIFIED 11 April 1986

Spencer F. Thew, P.E./L.S.

b. Records Taken

NED Forms 121, 58, 58a and 59 were used to record pertinent drilling and sampling operations including elevations, blow counts, etc. Section 8 contains a complete series of these logs for the seven borings along with location maps.

Summaries of daily activities and telephone logs can be found in Tables I and II of Section 5. A chain of custody log is in Section 6. The safety meeting report, NED Form 251, is located in Section 7.

c. Equipment Used

All equipment and supplies were provided by Atlantic Testing Laboratories, Limited. A listing of pertinent equipment follows:

- truck-mounted CME 55 drill rig
- 140 pound drive hammer used to advance the split spoon sampler
- 3-1/4" I.D. hollow stem augers
- 1-3/8" I.D. split spoon soil samplers, 2.0 ft in length
- AW-sized rods were used to advance the split spoon sampler.

d. Procedures

The boring locations were established by taping the distances given on Attachment No. 2 of the delivery order (Section 3a). The actual boring locations (Figure 3, Section 8c) varied from these specified locations due to site inaccessibility, difficulty in fine adjustments to the rig position due to the rails and/or the snow accumulation, or problems with utility clearance. Specific reasons for each location difference are noted on NED Form 58 under "General Remarks" for each boring in Section 8d. However, the following changes should be noted here:

1. FD-86-9(E) was moved from 15 ft to 37 ft from the centerline of the track due to water mains under the requested position. Town public utilities personnel requested that the boring be moved behind the pine tree on site.

2. FD-86-11(F) was moved 8.6 ft to the south in order to clear pipes used to empty tank cars on the siding into the oil tanks across the tracks to the north. It also should be noted that the soils at this site are strongly contaminated with spilled petroleum product.

3. FD-86-12(D) was moved from 20 ft to 26.2 ft from the wall of Peterson's Auto Parts due to water mains and a New England Telephone cable under the original site.

4. FD-86-13(C) was moved 6.5 ft to the south at the request of Mr. Novak in order to avoid crushing pine seedlings.

Elevations for the borings were roughly estimated from the contours on Attachment No. 2 of the delivery order (Section 3a).

The borings were advanced using a 3-1/4" I.D. hollow stem auger to 2.0 ft above the specified depth. The final two feet of the borings were completed by sampling.

Sampling was accomplished using a 1-3/8" I.D. split spoon sampler 2.0 ft in length. The sampler was advanced by a 140 pound hammer dropping in free fall from a height of 30 inches. Refusal was defined as 100 blows with a less than 12" penetration or bouncing refusal. The sample spoon shoes were kept reasonably sharp at all times. Dull, bent, or otherwise damaged samplers were not used.

The complete sample was saved and placed in 8 oz glass jars with hermetically sealed lids. The samples were not classified in the field due to one or more of the following reasons:

1. The samples were frozen.

2. The extreme cold of -10 to 10 degrees Fahrenheit threatened to freeze the samples.

3. It was snowing heavily.

The samples were brought to room temperature and classified in accordance with ASTM D-2488 no more than two days after sampling.

SECTION 5

SUMMARY OF ACTIVITIES
AND
TELEPHONE LOG

TABLE I

SUMMARY OF ACTIVITIES

Date	Activity
24 Feb	Monday: - site inspector made arrangements to meet with Town and Railway officials 25 Feb 86.
25 Feb	Tuesday: on-site 12:00 - 17:30 - site inspection made with Town and Railway officials. - utility clearance discussed. - boring locations were taped and staked.
26 Feb	Wednesday: - site inspector discussed site conditions with Patrick Sullivan, Manager of the Canton Subsurface Exploration Division of Atlantic Testing Laboratories, Limited.
6 Mar	Thursday: - geotechnical inspector mobilized to site.
7 Mar	Friday: on-site 08:00 - 16:00 - obtain utility clearances for borings. - mobilize drilling equipment to site.
8 Mar	Saturday: on-site 08:30 - 10:30 - site inspection with drillers. - secure planking necessary for on-site moves.
10 Mar	Monday: drillers on-site 07:00 - 17:30 - complete utility clearance. - drill FD-86-7 (A) and FD-86-8 (B). - conduct safety meeting. - stand by time 4 hours for on-site moves, safety meeting and final utility clearance from New England Telephone.
11 Mar	Tuesday: drillers on-site 06:30 - 17:00 - drill FD-86-9 (E), FD86-10 (G) and FD-86-11 (F). Note serious petroleum contamination of soils and water in FD-86-11. - notified Novak family of boring that will take place on their property tomorrow. - stand by time 3-1/2 hours for on-site moves.
12 Mar	Wednesday: drillers on-site 06:30 - 15:30 - drill FD-86-12 (D) and FD-86-13 (C). - begin sample classification. - stand by time 6 hours for on-site moves and backfilling holes.
13 Mar	Thursday: - complete sample classification. - travel to Portland, ME.

Date	Activity
14 Mar	Friday: at NED complex 10:15 - 11:00 - travel to Waltham, MA. - drop off samples with logs to Joseph Colucci of the Materials Lab. - visit Jim Blair, Terry Wong, John Hart.

TABLE II

TELEPHONE LOG

Date	Conversation
10 Mar	Monday: 08:05 and 08:30, Jim Blair - continuous sampling? No - on 5 ft centers with final sample giving extra 2 ft of boring depth. - depth of Boring FD-A? 32 ft. - need jar labels. He will mail them to Sharon Flint. - need to move FD-E and FD-D because of utilities - will keep him appraised of situation. - Corps will provide mylar of plan of explorations.
11 Mar	Tuesday: 08:00, Jim Blair - not in - left message re: job progress
12 Mar	Wednesday: 09:30, Paul L'Heureux - job progress - expected completion schedule - need to classify soils sometime after they are taken - will bring samples to Waltham after classification.
14 Mar	Friday: 07:15, Jim Blair - visit to Waltham - expect me in the morning 10:30 - 11:00, Jim Blair, Terry Wong, John Hart - charge an extra geotechnical day for sample classification. - put location of sewer lines, water mains, telephone cables on logs when the hole had to be moved because of them. - picked up mylar of Attachment No. 2.

SECTION 6

CHAIN OF CUSTODY LOG

ATLANTIC TESTING LABORATORIES, Limited

CHAIN OF CUSTODY LOG

PROJECT: Fort Fairfield ME
DACW 33-85-D-0011, D.O. #0009

ITEMS:

Tubes: none

Bottles: none

Jar Samples: 100 Jars, 5 boxes FD-86-7 thru FD-86-13

Core Boxes: none

Sampling Logs: FD-86-7, 8, 9, 10, 11, 12, 13 (7)

Date & Time Received	Date & Time Transferred	Comments	Custodian
0700, 10 March 86		as sampled	T Beddoe
	14 March 86, 10:30 AM		Joseph D Colucci

SECTION 7

SAFETY REPORTS

WEEKLY SAFETY MEETING

NEDSO

Date held 10 March 86

THRU: Area Engineer, Fort Fairfield Area

Time 0930

TO: Safety Office, NED

1. Weekly safety meeting was held this date for the following personnel:

Contract No. D.O. #9 Contractor Atlantic Testing Labs, Ltd

Conducted By TA Beddoe All personnel present (Contr) 3
(Sub) 1
(Govt) _____

Subjects discussed (Note, delete, or add):
EM 385-1-1, Section: _____

✓ Accident Prevention Plan

✗ Individual Protective Equipment - hard hats, gloves

✗ Prevention of Falls - esp. on slopes near river

✗ Back Injury, Safe Lifting Techniques - lifting of hammer.

✗ Fire Prevention - fire extinguisher in good condition.

✗ Sanitation, First Aid, Waste Disposal - check condition of First Aid Kit

✗ Tripping Hazards - trash, hose, nails in lumber - esp. nails and ties

Staging, Ladders, Concrete Forms, Safety Nets -

Hand Tools, Portable Power Tools, Woodworking Machinery -

✗ Equipment Inspection & Maintenance (Zero Defects) -

Hoisting Equipment -

✗ Ropes, Hooks, Chains and Slings -

Electrical Grounding, Temporary Wiring, GFCI -

Lockouts for safe clearance procedures - electrical, pressure, moving parts -

Welding, Cutting -

Excavations -

✗ Loose Rock and Steep Slopes - by river

Explosives -

Water Safety -

Toxic materials - hazards, MSDS, respiratory, ventilation -

Other - give emergency phone numbers, location of police, emergency services, hospital (in town) Safety regarding trains

Prepared by TA Beddoe Title _____

2. Forwarded.

Exposure hours 3/2/86 - 3/8/86

Signature Theresa A. Beddoe
Resident Engineer

CF: ATL 12 man-hours
Total 12

NEDAPP FL 251 Note no work Sun - Thurs.

WEEKLY SAFETY MEETING

FOR THE CONSTRUCTION INDUSTRY

fety Meeting Outlines **Week of** 1986

Company Name Atlantic Testing Labs **Job Name** Fort Fairfield ME 00013 **Date** 10 March 86

LIFTING AND CARRYING

It's impossible to accomplish any job in the construction industry without lifting and carrying various tools, equipment, and materials, yet very few of you do it correctly.

Your back does a good job of holding you erect, but is sure has a lousy design when it comes to bending and lifting, and maybe that's why 75 million Americans suffer from back problems.

Improper lifting and carrying can also result in hernias, sprains, strains, fractured bones, and injuries from falls.

You'll be lifting and carrying the rest of your life -- make an effort now to break your bad habits, and DO IT RIGHT FROM NOW ON!

Rule number one -- THINK -- start every lift with your brain.
To lift, get a good footing, with feet about shoulder width apart.
Keep your back straight, and bend at the knees.
Lift with your legs while keeping your back straight.
NEVER twist your body while lifting.
NEVER reach and lift at the same time.
NEVER carry a package that blocks your vision.
Make sure that the floor is clear for good footing, and clean to avoid slipping.
Carry items close to your body to minimize back strain.
If the load is more than you can safely lift or carry -- GET HELP!

It's amazing how efficient and careful people can become at lifting and carrying AFTER they have injured their back. Doesn't it make good sense to lift and carry correctly to AVOID painful back problems? Remember to THINK, then do it right, starting today!

SAFETY REMINDERS WHEN LIFTING MATERIALS WITH A CRANE, BE ALERT, AND NEVER SWING THE LOAD OVER THE HEADS OF OTHERS.

Special Topics For Your Project watch overhead electrical lines; when drilling on river side of tracks, be especially mindful of your footing; be mindful of footing problems due to rails.

Employee Safety Recommendations

Meeting Attended By

TA Beddoe (ATL)
Kevin Hawkins (ATL)
Mark Hawkins (ATL)
Clayton Sullivan (CP Rail)

Supervisors Signature Theresa A. Beddoe

These instructions do not supersede local, state or federal regulations

WEEKLY SAFETY MEETING

NEDSO

Date held —

THRU: Area Engineer, Fort Fairfield Area

Time —

TO: Safety Office, NED

1. Weekly safety meeting was held this date for the following personnel:

Contract No. D.O. #9 Contractor Atlantic Testing Labs, Ltd

Conducted By — All personnel present (Contr) _____
(Sub) _____
(Govt) _____

Subjects discussed (Note, delete, or add):
EM 385-1-1, Section: _____

Accident Prevention Plan

Individual Protective Equipment -

Prevention of Falls -

Back Injury, Safe Lifting Techniques -

Fire Prevention -

Sanitation, First Aid, Waste Disposal -

Tripping Hazards - trash, hose, nails in lumber -

Staging, Ladders, Concrete Forms, Safety Nets -

Hand Tools, Portable Power Tools, Woodworking Machinery -

Equipment Inspection & Maintenance (Zero Defects) -

Hoisting Equipment -

Ropes, Hooks, Chains and Slings -

Electrical Grounding, Temporary Wiring, GFCI -

Lockouts for safe clearance procedures - electrical, pressure, moving parts -

Welding, Cutting -

Excavations -

Loose Rock and Steep Slopes -

Explosives -

Water Safety -

Toxic materials - hazards, MSDS, respiratory, ventilation -

Other - Exposure hours 3/9/86 - 3/15/86
ATL 86.5

Prepared by TMB Title —

2. Forwarded. CP Rail 12
96.50

Signature Theresa A. Beddoe
Resident Engineer

CF:

Note: No work done on site
3/9 Sunday, 3/13/86 Thursday - 3/15/86 Saturday
Time for geotechnical inspector's soil classification
10.25 hours on 3/12/86 Wednesday - 3/13/86 Thurs.

NED APR FL 251

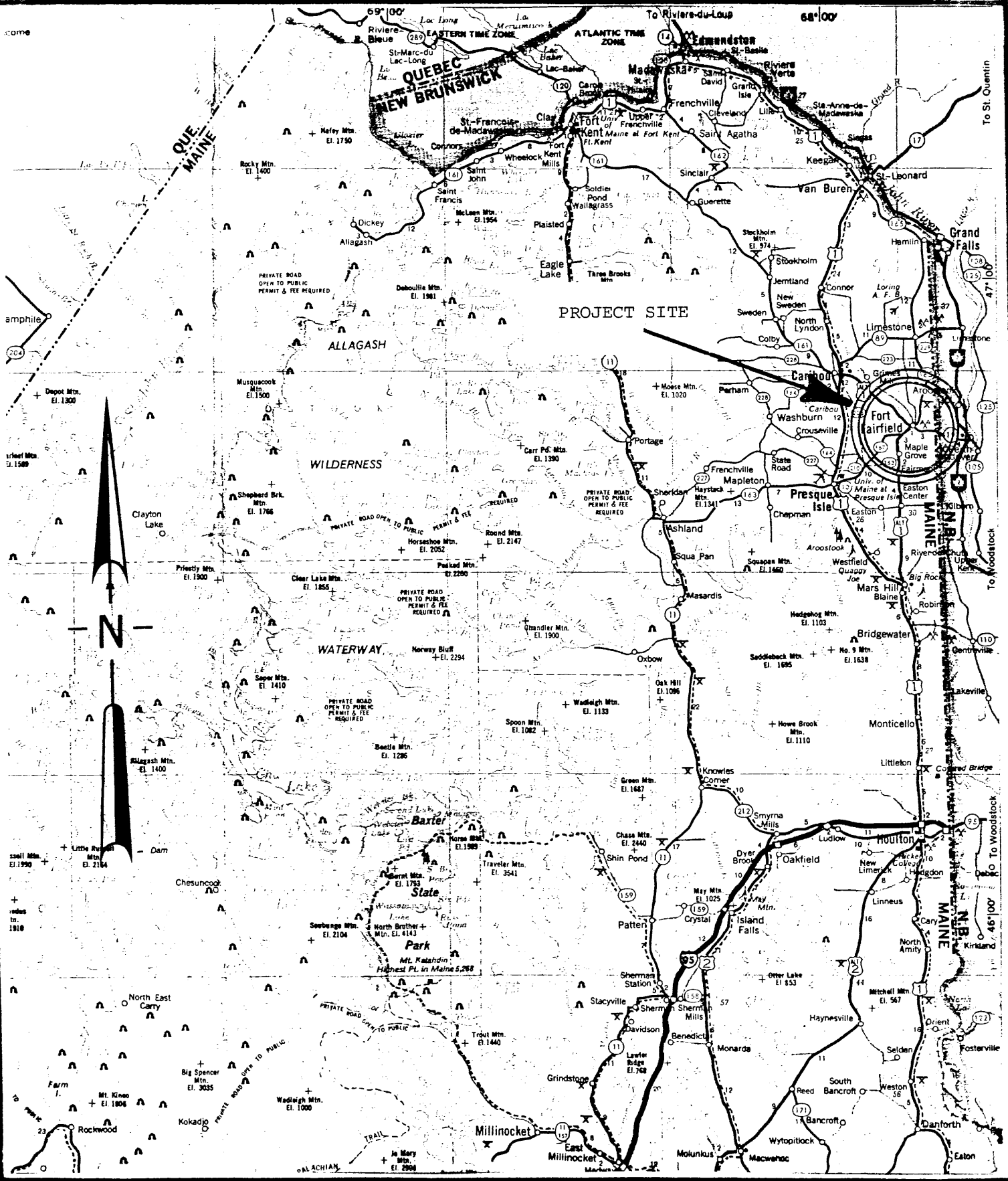
SECTION 8

BORING LOGS

a. **Figure 1 - General Project Map**

FIGURE 1

GENERAL PROJECT MAP

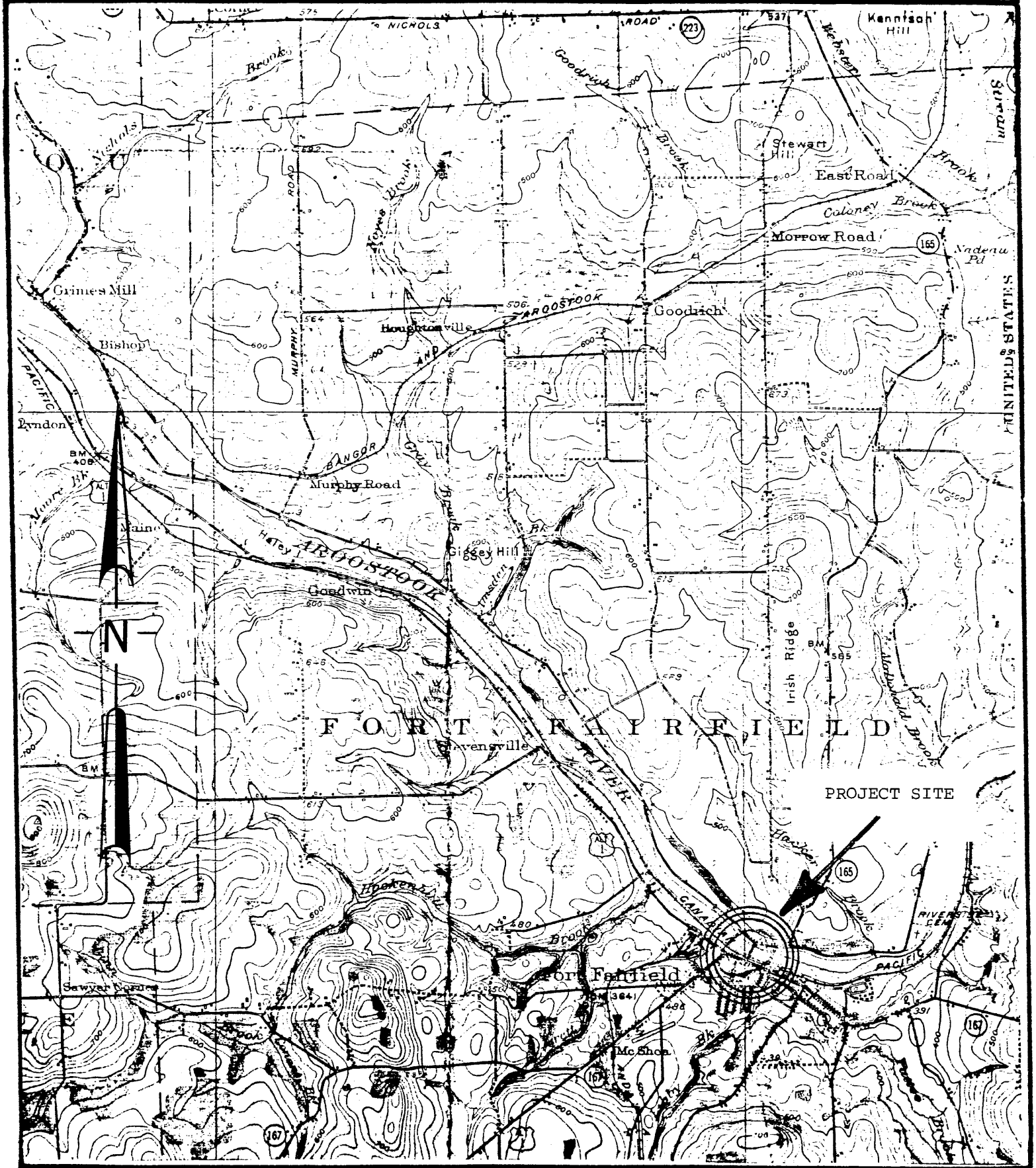


PROJECT No CD013	SCALE: 1"=14 miles	NORTHERN MAINE

b. Figure 2 – Site Location Map

FIGURE 2

SITE LOCATION MAP

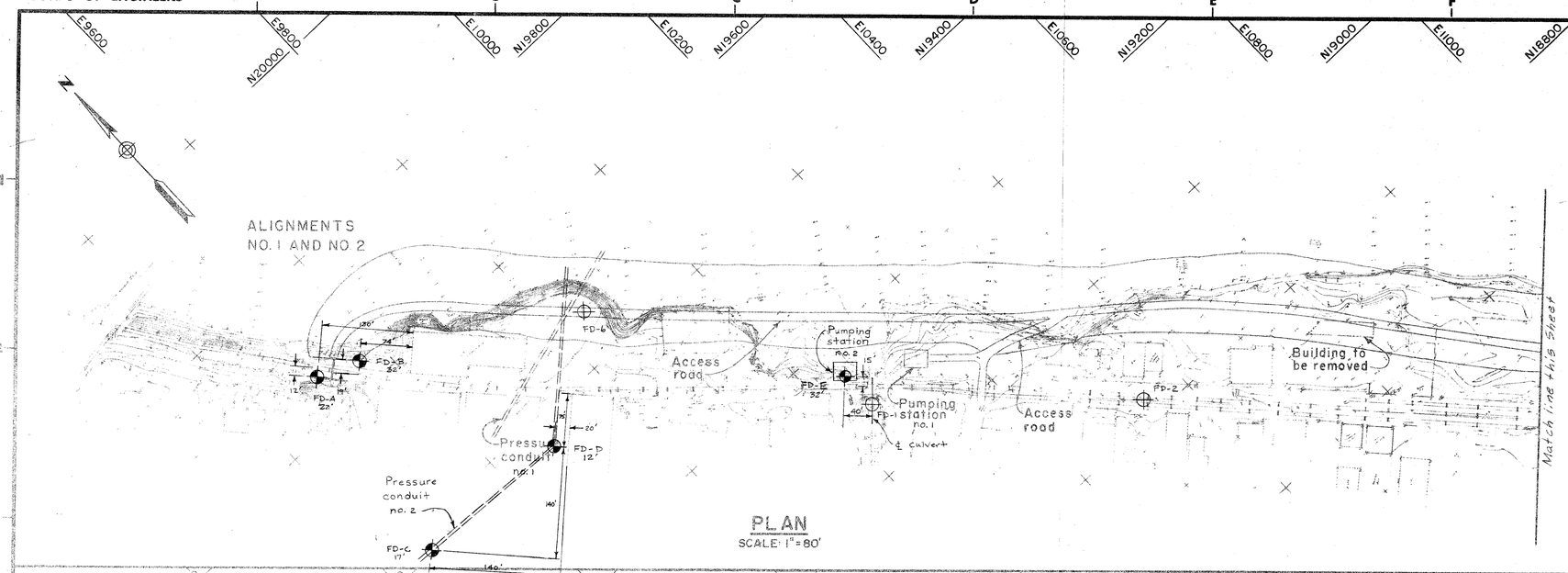


PROJECT No CD013	SCALE: 1:62,500	U.S.G.S. QUAD: Fort Fairfield, ME

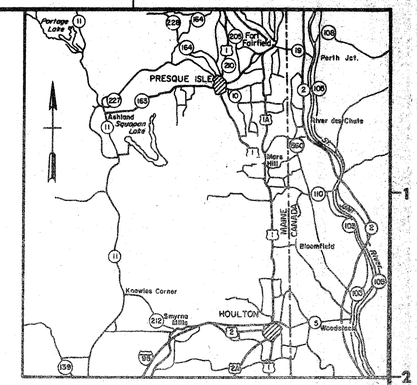
c. Figure 3 – Boring Location Plan

CORPS OF ENGINEERS

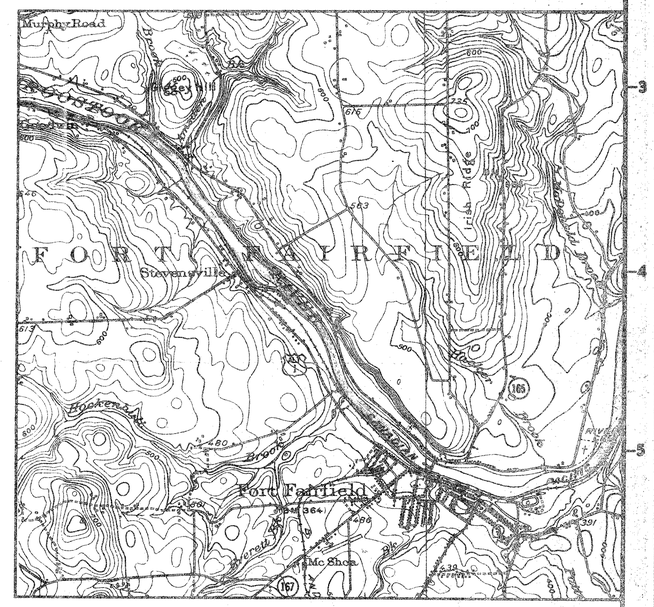
U. S. ARMY



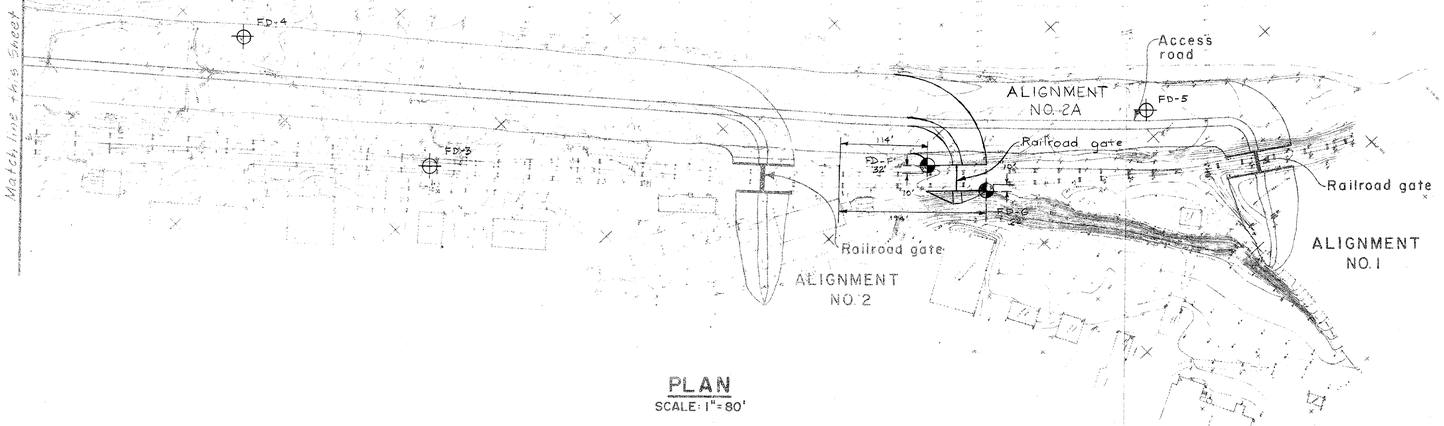
PLAN
SCALE: 1"=80'



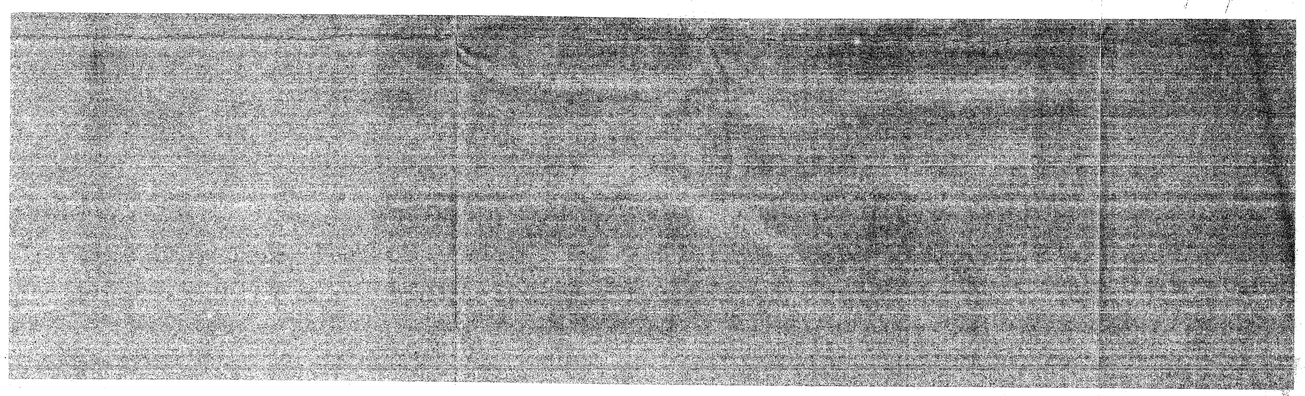
LOCATION MAP
SCALE IN MILES
10 0 10



VICINITY MAP



PLAN
SCALE: 1"=80'



LEGEND

- Exploration Location (Proposed)
- FD-C Exploration Number
- 20' Required Depth of Exploration
- Exploration Location (Previous Contract)
- FD-1 Exploration Number

Note: Plan based on Field Survey by U.S. Army Corps of Engineers, June 1978

GRAPHIC SCALES

1"=80' 80' 0 80' 160'

1"=10' 10' 0' 10' 20'

DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION
CORPS OF ENGINEERS
WALTHAM, MASS.

WATER RESOURCES INVESTIGATION

ST. JOHN RIVER BASIN

AROOSTOOK RIVER

FORT FAIRFIELD LOCAL PROTECTION

EXPLORATION PLAN

SCALE AS SHOWN JULY 1983

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. D.O. #9

Site Fort Fairfield, ME. Page 1 of 4 Pages

Hole No. FD-86-12 Diam. (Casing) 3¼" Hollow Stem Auger Boring Started 12 March 86

Co-ordinates: N see boring location sketch Boring Completed 12 March 86

Drilled by Mark + Kevin Hawkins Report Submitted 18 March 86

Purpose of Exploration determine foundation conditions for dike improvement project

Elevation Top of Hole 368 * M.S.L.
Total Overburden Drilled 12 Feet
Elevation Top of Rock — M.S.L.
Elevation Bottom of Hole 356 * M.S.L.
Total Rock Drilled — Feet
Total Depth of Hole 12 Feet
Core Recovered — %
Core Recovered — Ft.; — Diam. — In.
Soil Samples 1 3/8 In. Diam. 3 No.
Soil Samples — In. Diam. — No.

Casing Left in Place — Feet

* Elevations provided by reviewer of draft report.

Water Table Depth dry

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	10	3¼" I.D. Hollow Stem Auger
10	12	1 3/8" I.D. SPT Sampler

INDEX

Ground Water — Back of Page 4
Boring Location Sketch — Back of Page 4
Overburden Record — Page 2-3
Rock Drilling — Page —
— Page —
— Page —
— Page —

Prepared by T A Beddoe
Field Data

Lab. Data

Submitted by Atlantic Testing Labs, Ltd.

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

GROUND WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF HOLE	DEPTH TO WATER	ELEVATION WATER	REMARKS
AVERAGE GROUND WATER ELEVATION _____						

Note: Depths are in feet below original ground

BORING LOCATION SKETCH

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site Fort Fairfield, ME. Page 2 of 4 Pages

Boring No. FD-86-12 Desig. D Diam. (Casing) 3¼"

Co-ordinates: X see Boring ☒ Location Sketch

Elevation Top of Boring 368* M.S.L. Hammer Wt. 140# Boring Started 12 Mar 86

Total Overburden Drilled 12 Feet Hammer Drop 30" Boring Completed 12 Mar 86

Elevation Top of Rock — M.S.L. Casing Left —

Total Rock Drilled — Feet Subsurface Water Data — Page 4

Elevation Bottom of Boring 356* M.S.L. Obs. Well no

Total Depth of Boring 12 Feet Drilled By Mark + Kevin Hawkins

Core Recovered — % No. Boxes — Mfg. Des. Drill Truck mounted CME 55

Core Recovered — Ft : — Diam. — In. Inspected By: TA Beddoe

Soil Samples 1 3/8 In. Diam. 3 No. Classification By: TA Beddoe

Soil Samples — In. Diam. — No. Classification By: —

DEPTH 0'	1" = 2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE / REC	BLOWS PER 6" / CORE RECVY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.25'				REC		3¼" I.D. Hollow Stem Auger Sampling by 1 3/8" I.D. by 2' long split spoon soil sampler S-1 encountered bouncing refusal	3" asphalt
0.75'		S-1	1 3/8	100%	24/6 ounce		Brown and SAND and SILT, some fine GRAVEL, (wet, nonplastic) dense SW
						Augering difficult from 2'-4' because of boulders	Boulders
4.5'							change at 4.0'
		S-2	1 3/8	80%	12/7/5/7		Brown SILT, little f. SAND, (moist, nonplastic) loose ML
6.5'						Augering easy for remainder of boring.	
10.0'						end of augering	

GENERAL REMARKS:
* Elevations provided by reviewer of draft report.
Boring moved due to water main and New England Telephone Cable under original location.

Site	Boring No.	Page
. Fort Fairfield, ME.	FD-86-12	3 of 4

DEPTH		CORE/SAMPLE			BLOWS PER FT. / CORE RECVY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
10.0'	1' to 2'	NO.	SIZE	DEPTH RANGE			
		S-3	1 3/8	REC 65%	5/6/4/3	3 1/4" I.D. Hollow stem Auger sampling by 1 3/8" I.D. by 2' long split spoon soil sampler	Brown m& SAND and SILT, little c& GRAVEL (moist, nonplastic) loose SP
12.0'						Bottom of hole at 12.0' as instructed in D.O.	

Site: Fort Fairfield, ME.
Boring No: FD-86-12

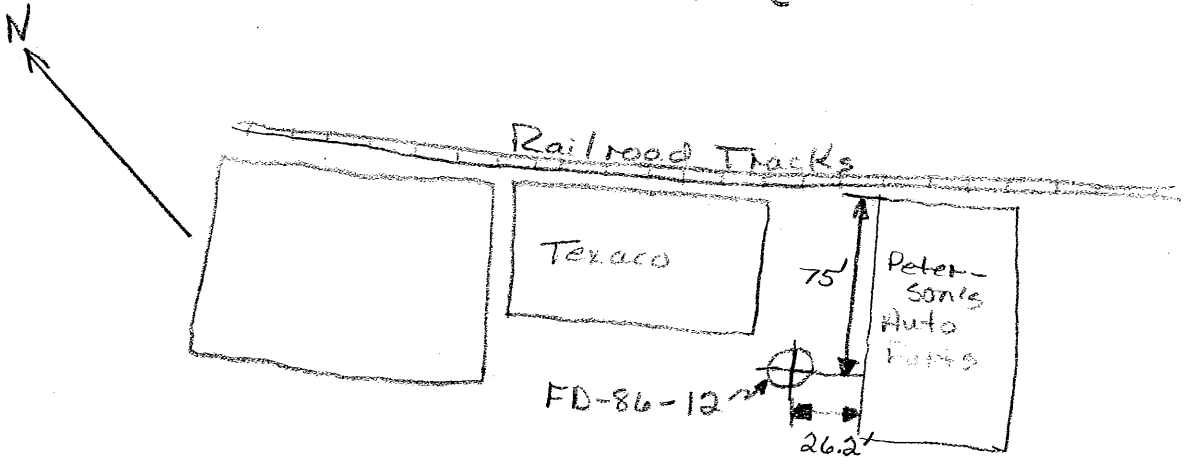
SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER	REMARKS
12 Mar	0900	10.0'	12.0'	dry	—	hole completed in two hours, filled in upon completion as water not expected due to elevation of water table along the tracks and difference in elevation between boring and tracks.

Note: Depths are in feet below original ground

BORING LOCATION SKETCH

Not to scale



CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. D.O. #9

Site Fort Fairfield, ME. Page 1 of 4 Pages

Hole No. FD-86-13 Diam. (Casing) 3¼" Hollow Stem Auger Boring Started 12 March 86

Co-ordinates: ~~N~~ See Boring Location Sketch Boring Completed 12 March 86

Drilled by Mark + Kevin Hawkins Report Submitted 18 March 86

Purpose of Exploration determine foundation conditions for dike improvement project

Elevation Top of Hole 379 * M.S.L.
Total Overburden Drilled 17 Feet
Elevation Top of Rock — M.S.L.
Elevation Bottom of Hole 362 * M.S.L.
Total Rock Drilled — Feet
Total Depth of Hole 17 Feet
Core Recovered — %
Core Recovered — Ft.; — Diam. — In.
Soil Samples 1 3/8" In. Diam. 4 No.
Soil Samples — In. Diam. — No.

Casing Left in Place — Feet

* Elevations provided by reviewer of draft report.

Water Table Depth dry

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	15	3¼" I.D. Hollow Stem Auger
15	17	1 3/8" I.D. SPT Sampler

INDEX

Ground Water — Back of Page 4
Boring Location Sketch — Back of Page 4
Overburden Record — Page 2-3
Rock Drilling — Page —
— Page —
— Page —
— Page —

Prepared by T A Beddoe — Field Data — Lab. Data —

Submitted by Atlantic Testing Labs, Ltd

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site Fort Fairfield, ME. Page 2 of 4 Pages

Boring No. FD-86-13 Desig. C Diam. (Casing) 3 1/4"

Co-ordinates: X See Boring Y Location Sketch

Elevation Top of Boring 379* M.S.L.
Total Overburden Drilled 17 Feet
Elevation Top of Rock — M.S.L.
Total Rock Drilled — Feet
Elevation Bottom of Boring 362* M.S.L.
Total Depth of Boring 17 Feet
Core Recovered — % No. Boxes —
Core Recovered — Ft : — Diam. — In.
Soil Samples 1 3/8 In. Diam. 4 No.
Soil Samples — In. Diam. — No.

Hammer Wt. 140# Boring Started 12 Mar 86
Hammer Drop 30" Boring Completed 12 Mar 86
Casing Left —
Subsurface Water Data — Page 4
Obs. Well NO
Drilled By Mark + Kevin Hawkins
Mfg. Des. Drill Truck mounted CME 55
Inspected By: TA Beddor
Classification By: TA Beddor
Classification By: —

DEPTH 0.0' / 1" = 2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE / CORE RECVY	BLOWS PER FT. / CORE RECVY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.5'	S-1	1 3/8	REC 70%	75	3 1/4" I.D. Hollow Stem Auger Sampling by 1 3/8" I.D. by 2' long split spoon soil sampler Augering easy for full depth of boring S-1 encountered refusal due to frost.	Brown SILT, some c/m SAND, trace c/f GRAVEL, trace ORGANIC MATTER (grass) (moist, nonplastic) dense due to frost ML
5.0'						
	S-2	1 3/8	65%	2/7/6/5		Similar Soils, loose, ML
7.0'						
10.0'						

GENERAL REMARKS:
* Elevations provided by reviewer of draft report.
Boring moved so as not to crush pine seedlings at Mr. Novak's request.

Site	Boring No.	Page
Fort Fairfield, ME.	FD-86-13	3 of 4

DEPTH		CORE/SAMPLE			BLOWS PER FT. CORE RECVY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
10.0'	1' to 2'	NO.	SIZE	DEPTH RANGE REC			
12.0'		S-3	1 3/8	80%	2/3/3/5	3 1/4" I.D. Hollow Stem Auger Sampling by 1 3/8" I.D. by 2' long split spoon soil sampler Augering easy for full depth of boring	Brown m-f SAND, trace SILT, trace GRAVEL (moist, non plastic) loose SP
15.0'						end of augering	
17.0'		S-4	1 3/8	75%	3/1/3/7		Brown SILT, some c-m SAND, trace of GRAVEL (moist, nonplastic) loose ML
						bottom of hole at 17.0' as instructed in D.O.	

Site: Fort Fairfield, ME.

Boring No. FD-86-11

DEPTH		CORE/SAMPLE			BLOWS PER FT. CORE RECVY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
10.0'	1' 2'	NO.	SIZE	DEPTH RANGE / REC			
12.0'		S-3	1 3/8	REC 75%	11/13/14/18	3 1/4" I.D. Hollow Stem Auger Sampling by 1 3/8" I.D. by 2' long split spoon soil sampler. Augering easy for full depth of boring	Grey cmf SAND, some cf GRAVEL, little SILT (moist, nonplastic) slightly dense SW, strong petroleum odor
15.0'							
15.5'		S-4	1 3/8	40%	100/6 ounce	Bouncing Refusal	Grey cmf SAND and cf GRAVEL, little SILT (wet, nonplastic) dense SW, strong petroleum odor, spoon dripped petroleum sheen when pulled.** (see general remarks).
20.0						- Water Table measured at 17.1'	
22.0		S-5	1 3/8	45%	3/4/7/12		Grey f. SAND, little SILT, trace coarse GRAVEL (wet, nonplastic) loose SP, petroleum odor
25.0'							
27.0'		S-6	1 3/8	100%	4/7/9/12		Black m-f SAND, trace SILT with two 1/2" layers of brown SILT at 26.0' and 27.0' (wet, nonplastic) loose SP, petroleum odor

Site: Fort Fairfield, ME.	Boring No. FD-86-11	Page 4 of 5

DEPTH 27.0'	DEPTH 1' 2'	CORE/SAMPLE NO.	CORE/SAMPLE SIZE	CORE/SAMPLE DEPTH PAGE / CORE REC'Y	BLOWS PER FT.	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
				REC		3¼" I.D. Hollow Stem Auger Sampling by 1 3/8" I.D. by 2' long split spoon soil sampler. Augering easy for full depth of boring	
30.0'						end of augering	
		S-7	1 3/8	70%	15/7/11/12		Grey SILT, trace cmf SAND at 30.0' (wet, nonplastic) loose ML
32.0'						Bottom of hole at 32.0' as instructed in D.O.	

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. D.O. #9

Site Fort Fairfield, ME. Page 1 of 5 Pages

Hole No. FD-86-11 Diam. (Casing) 3 1/4" Hollow Stem Auger Boring Started 11 March 86

Co-ordinates: ~~N~~ see boring location sketch Boring Completed 11 March 86

Drilled by Mark + Kevin Hawkins Report Submitted 12 March 86

Purpose of Exploration determine foundation conditions for dike improvement project

Elevation Top of Hole 360 ± * M.S.L.
Total Overburden Drilled 32 Feet
Elevation Top of Rock — M.S.L.
Elevation Bottom of Hole 328 ± * M.S.L.
Total Rock Drilled — Feet
Total Depth of Hole 32 Feet
Core Recovered — %
Core Recovered — Ft.; — Diam. — In.
Soil Samples 1 3/8 In. Diam. 7 No.
Soil Samples — In. Diam. — No.

Casing Left in Place — Feet

* Elevations interpolated from Attachment 2 of D.O.

Water Table Depth 17.1'

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	30	3 1/4" I.D. Hollow Stem Auger
30	32	1 3/8" I.D. SPT Sampler

INDEX

Ground Water — Back of Page 5
Boring Location Sketch — Back of Page 5
Overburden Record — Page 2-4
Rock Drilling — Page —
— Page —
— Page —
— Page —

Prepared by T A Beddoe — Field Data — Lab. Data —

Submitted by Atlantic Testing Labs, Ltd

NED FORM DEC 63 121

REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

Site: Fort Fairfield, ME.
Boring No: FD-86-10

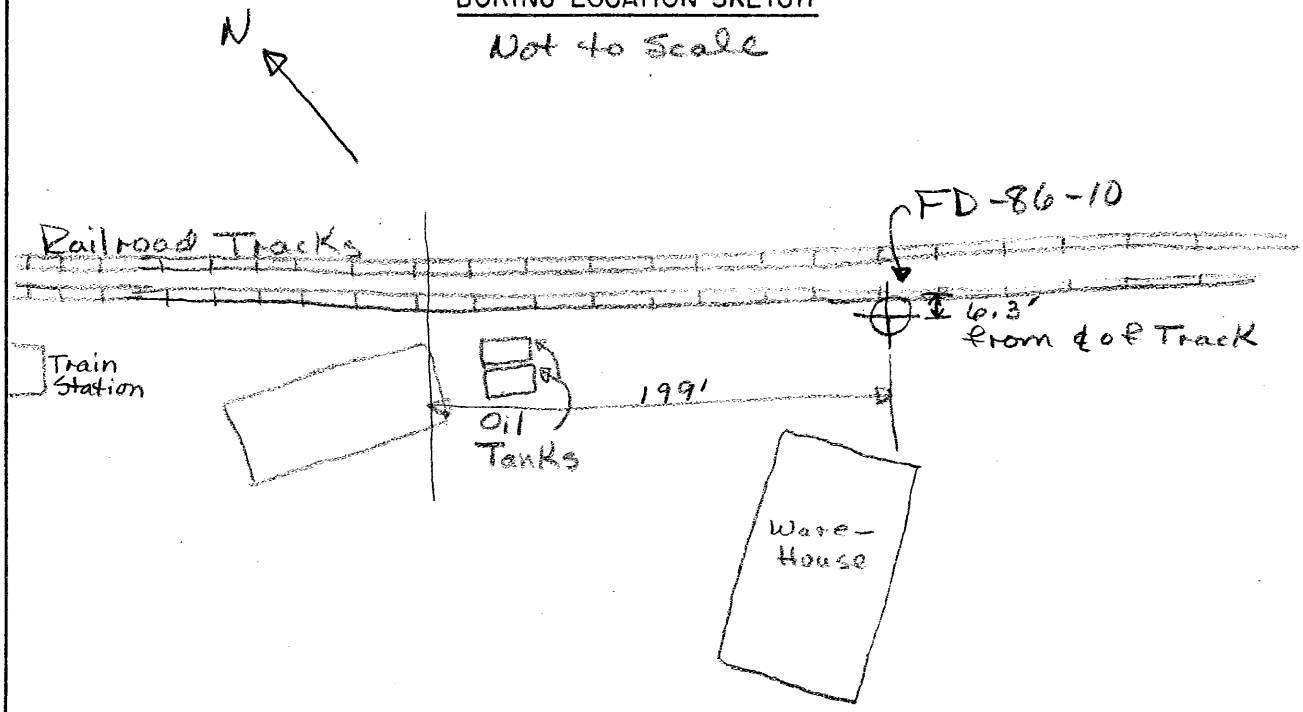
SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER	REMARKS
11 Mar	12:17	20.0'	22.0'	12.8'	348.2± ' *	boring completed in two hours, measured immediately after completion of hole
		* Elevations interpolated from Attachment 2 of D.O.				

Note: Depths are in feet below original ground

BORING LOCATION SKETCH

Not to Scale



Site: Fort Fairfield, ME.
Boring No: FD-86-11

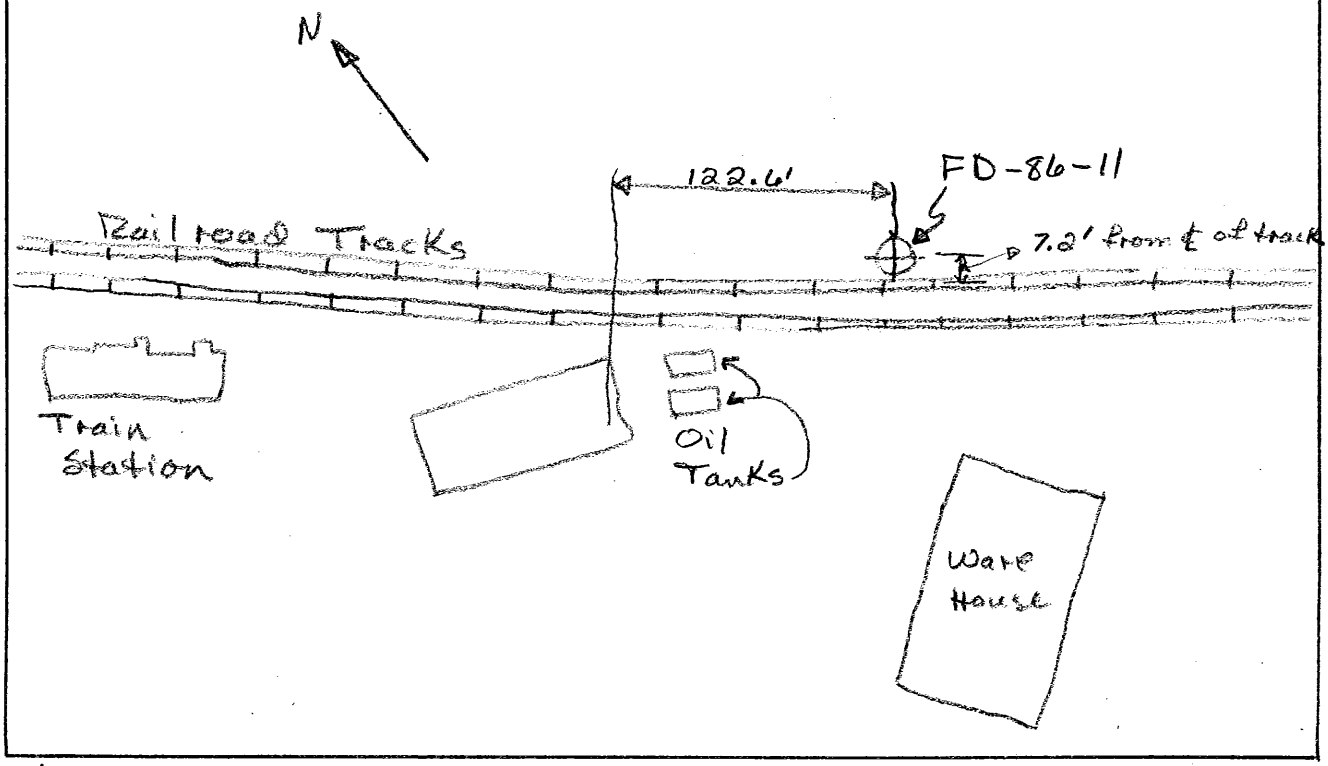
SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER	REMARKS
11 Mar	15:53	30.0'	32.0'	17.1'	342.9± *	boring completed in a few hours, measured immediately after completion of hole.
		*elevations interpolated from Attachment 2 of D.O.				

Note: Depths are in feet below original ground

BORING LOCATION SKETCH

Not to Scale



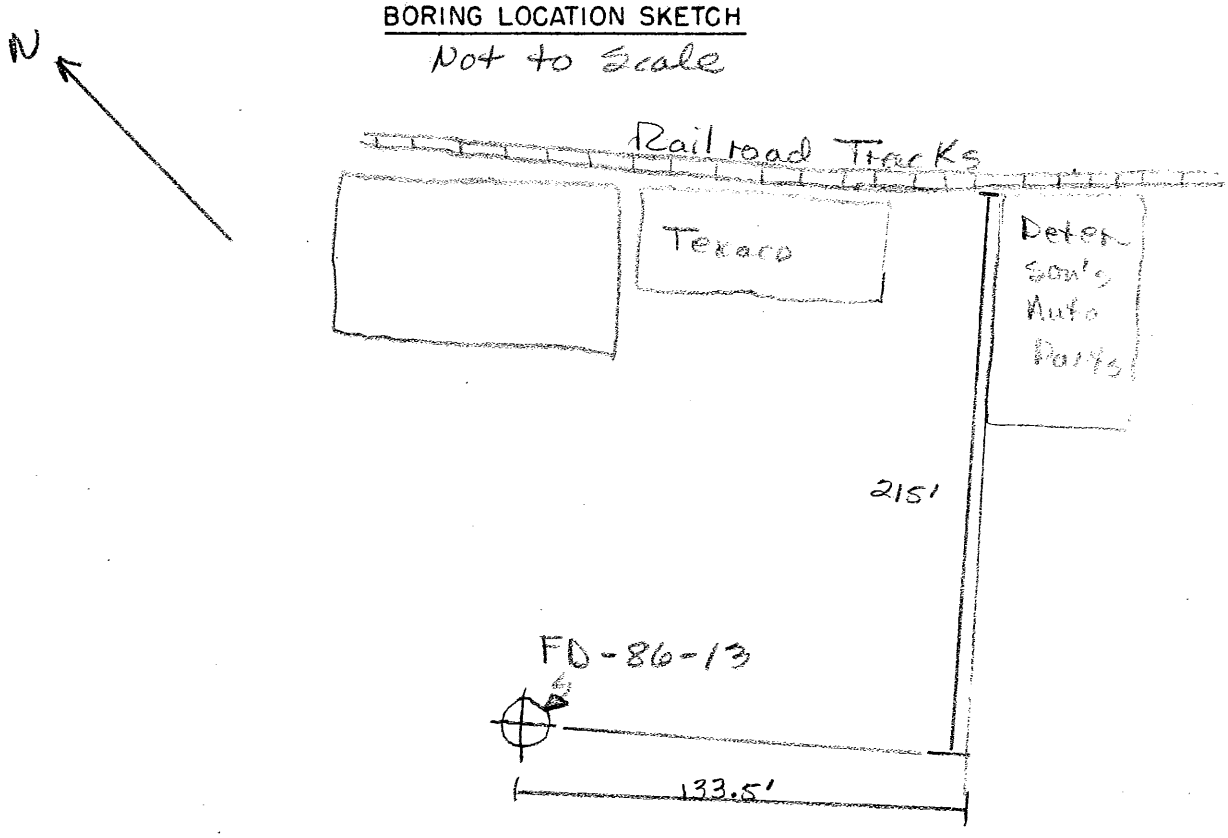
Site: Fort Fairfield, ME.
Boring No: FD-86-13

SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER	REMARKS
18 Mar	11:30	15.0'	17.0'	dry	—	hole completed in two hours, filled in upon completion as water not expected due to elevation of water table along the tracks and difference in elevation between boring and tracks.

Note: Depths are in feet below original ground

BORING LOCATION SKETCH
Not to Scale



U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site Fort Fairfield, ME. Page 2 of 5 Pages

Boring No. FD-86-11 Desig. F Diam. (Casing) 3¼"

Co-ordinates: N See Boring E Location Plan

Elevation Top of Boring 360± * M.S.L. Hammer Wt. 140# Boring Started 11 Mar 86

Total Overburden Drilled 32 Feet Hammer Drop 30" Boring Completed 11 Mar 86

Elevation Top of Rock — M.S.L. Casing Left —

Total Rock Drilled — Feet Subsurface Water Data — Page 5

Elevation Bottom of Boring 328± * M.S.L. Obs. Well no

Total Depth of Boring 32 Feet Drilled By Mark + Kevin HawKins

Core Recovered — % No. Boxes — Mfg. Des. Drill Truck mounted CME 55

Core Recovered — Ft : — Diam. — In. Inspected By: TA Beddoe

Soil Samples 1 3/8 In. Diam. 7 No. Classification By: TA Beddoe

Soil Samples — In. Diam. — No. Classification By: —

DEPTH	CORE/SAMPLE NO.	CORE/SAMPLE SIZE	CORE/SAMPLE DEPTH RANGE / REC.	BLOWS PER FT. / CORE RECVY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0'						
1.0'	S-1	1 3/8	85%	31/106	3¼" I.D. Hollow Stem Auger Sampling by 1 3/8" I.D. by 2' long split spoon soil sampler Augering easy for full depth of boring S-1 refusal due to frost	Black fine GRAVEL and cmf SAND, some SILT (wet, nonplastic) dense due to frost GP FILL (based on appearance, texture and odor)
5.0'						
7.0'	S-2	1 3/8	5%	4/4/4/4	Grab sample from auger at ~6.0'	Black cmf SAND and light brown SILT, trace cf GRAVEL (saturated, non-plastic) loose ML - slight petroleum product odor Auger sample - similar soils ML (moist)
10.0'						

GENERAL REMARKS:
*Elevations interpolated from Attachment 2 of D.O.
Boring moved to avoid pipes used to unload tank cars.
**Contamination due to spills from unloading rail cars by the siding.

d. Boring Logs

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FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. D.O. #9

Site Fort Fairfield, ME. Page 1 of 5 Pages

Hole No. FO-86-7 Diam. (Casing) 3¼" Hollow Stem Auger Boring Started 10 March 86

Co-ordinates: N ____ E see boring location plan Boring Completed 10 March 86

Drilled by Mark + Kevin Hawkins Report Submitted 18 March 86

Purpose of Exploration determine foundation conditions for dike improvement project

Elevation Top of Hole 361 ± * M.S.L. Casing Left in Place — Feet

Total Overburden Drilled 32 Feet

Elevation Top of Rock — M.S.L.

Elevation Bottom of Hole 329 ± * M.S.L.

Total Rock Drilled — Feet

Total Depth of Hole 32 Feet

Core Recovered — %

Core Recovered — Ft.; — Diam. — in.

Soil Samples 1 3/8 in. Diam. 7 No.

Soil Samples — in. Diam. — No. Water Table Depth 12.3'

* Elevations interpolated from Attachment 2 of D.O.

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	30	3¼" I.D. Hollow Stem Auger
30	32	1 3/8" I.D. SPT Sampler

INDEX

Ground Water ____ Back of Page 5
Boring Location Sketch ____ Back of Page 5
Overburden Record ____ Page 2-4
Rock Drilling ____ Page —
____ Page ____
____ Page ____
____ Page ____

Prepared by TA Beddoe
Field Data Lab. Data

Submitted by Atlantic Testing Labs, Ltd.

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FIELD LOG OF TEST BORING

Site Fort Fairfield, ME. Page 2 of 5 Pages

Boring No. FD-86-7 Desig. A Diam. (Casing) 3¼"

Co-ordinates: N See Boring E Location Plan

Elevation Top of Boring 361 ± * M.S.L. | Hammer Wt. 140# | Boring Started 10 Mar 86

Total Overburden Drilled 32 Feet | Hammer Drop 30" | Boring Completed 10 Mar 86

Elevation Top of Rock — M.S.L. | Casing Left —

Total Rock Drilled — Feet | Subsurface Water Data | Page 5

Elevation Bottom of Boring 329 ± * M.S.L. | Obs. Well no

Total Depth of Boring 32 Feet | Drilled By Mark + Kevin Hawkins

Core Recovered — % No. Boxes — | Mfg. Des. Drill truck mounted CME 55

Core Recovered — Ft : — Diam. — In. | Inspected By: TA Beddoe

Soil Samples 1 3/8 In. Diam. 7 No. | Classification By: TA Beddoe

Soil Samples — In. Diam. — No. | Classification By: —

DEPTH 0' / 1" = 2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. CORE RECVY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0'					3¼" Hollow Stem Auger Sampling by 1 3/8" I.D. by 2' long split spoon soil sampler	Brown cmF SAND and GRAVEL, little SILT (moist, nonplastic)
2.0'	S-1	1 3/8	Rec 95%	24/44/58/77	Augering easy for full depth of boring	Note greater amount of SILT with depth. Dense because of frost. SW FILL
5.0'	S-2	1 3/8	75%	79/57/72/77		Brown cmF SAND and GRAVEL, trace SILT (dry, nonplastic) dense SW
7.0'						9.0' Note change to greater amount of SAND.
10.0'						

GENERAL REMARKS:
Boring only 5.3' from ℄ of track due to inaccessibility of further distances and due to probability of intercepting concrete wall.
*Elevations interpolated from Attachment #2 of D.O.

Site: . Fort Fairfield, ME.

Boring No. FD-86-7

DEPTH	CORE/SAMPLE NO.	CORE/SAMPLE SIZE	CORE/SAMPLE DEPTH RANGE / REC	BLOWS PER FT. CORE REC'VY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
10.0'					3 1/4" Hollow Stem Auger Sampling by 1 3/8" I.D. by 2' long split spoon soil sampler	
	S-3	1 3/8	REC 85%	7/12/13/21	Augering easy for full depth of boring	Brown cmf SAND, some cf GRAVEL, trace SILT (dry, non plastic) slightly dense SW
12.0'					Water Table measured at 12.3'	
15.0'						Similar Soils, wet
	S-4	1 3/8	80%	7/21/37/52		Brown cf GRAVEL, little cmf SAND, trace SILT (saturated, non plastic) Slightly Dense GW
17.0'						
20.0'						
	S-5	1 3/8	70%	12/23/23/20		Brown cmf SAND, little cf GRAVEL, trace SILT (saturated, nonplastic) slightly dense SW
22.0'						Brown cf GRAVEL, little cmf SAND, trace SILT (saturated, nonplastic) slightly dense GW
25.0'						
	S-6	1 3/8	60%	13/17/17/10		Brown cmf SAND and cf GRAVEL, little SILT (saturated, nonplastic) slightly dense SW
27.0'						

FORM 258A (Test)

Site	Boring No.	Page
Fort Fairfield, ME.	FD-86-7	4 of 5

DEPTH 27.0'	1" = 2'	CORE/SAMPLE NO.	SIZE	~~DEPTH RANGE~~ REC	BLOWS PER FT. / ~~CORE REC'VY~~	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
30.0'						3¼" Hollow stem Auger sampling by 1⅜" I.D. by 2' long split spoon soil sampler augering easy for full depth of boring end of augering	
32.0'		S-7	1⅜	65%	10 / 16 / 23 / 27		Brown of GRAVEL and cmf SAND, little SILT (saturated, nonplastic) slightly dense GW
						Bottom of hole at 32.0' as instructed in D.O.	

Site: Fort Fairfield, ME.
Boring No: FD-86-7

SUBSURFACE WATER OBSERVATIONS

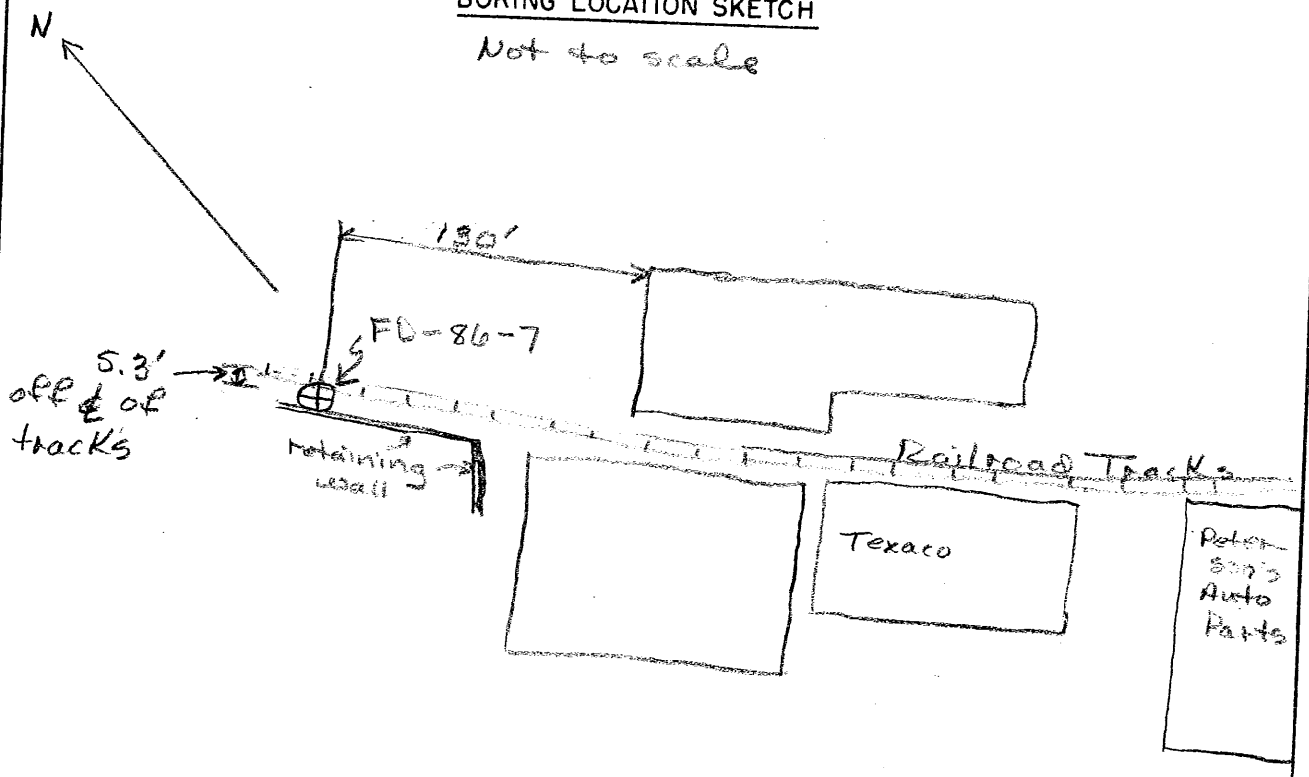
DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER	REMARKS
10 Mar	1100	15.0'	17.0'	12.3'	348.7± ' *	measured after sample S-4 taken.

* Elevations interpolated from Attachment 2 of D.O.

Note: Depths are in feet below original ground

BORING LOCATION SKETCH

Not to scale



FORM MAR 71 59 (Test)

Boring No. FD-86-7

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. D.O. # 9

Site Fort Fairfield, ME. Page 1 of 5 Pages

Hole No. FD-86-B Diam. (Casing) 3¼" Hollow Stem Auger Boring Started 10 March 86

Co-ordinates: ~~N~~ see boring location sketch Boring Completed 10 March 86

Drilled by Mark + Kevin Hawkins Report Submitted 18 March 86

Purpose of Exploration determine foundation conditions for dike improvement project

Elevation Top of Hole 361 ± * M.S.L.
Total Overburden Drilled 32 Feet
Elevation Top of Rock — M.S.L.
Elevation Bottom of Hole 329 ± * M.S.L.
Total Rock Drilled — Feet
Total Depth of Hole 32 Feet
Core Recovered — %
Core Recovered — Ft.; — Diam. — In.
Soil Samples 1⅜ In. Diam. 7 No.
Soil Samples — In. Diam. — No.

Casing Left in Place — Feet

* Elevations interpolated from Attachment 2 of D.O.

Water Table Depth 13.8'.

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	30	3¼" I.D. Hollow Stem Auger
30	32	1⅜" I.D. SPT Sampler

INDEX

Ground Water — Back of Page 5
Boring Location Sketch — Back of Page 5
Overburden Record — Page 2-4
Rock Drilling — Page —
— Page —
— Page —
— Page —

Prepared by I A Beddoe — Field Data / Lab. Data —

Submitted by Atlantic Testing Labs, Ltd.

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NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site Fort Fairfield, ME. Page 2 of 5 Pages

Boring No. FD-86-8 Desig. B Diam. (Casing) 3¼"

Co-ordinates: N see Boring E Location Sketch

Elevation Top of Boring 361 ± * M.S.L.
Total Overburden Drilled 32 Feet
Elevation Top of Rock — M.S.L.
Total Rock Drilled — Feet
Elevation Bottom of Boring 329 ± * M.S.L.
Total Depth of Boring 32 Feet
Core Recovered — % No. Boxes —
Core Recovered — Ft : — Diam. — In.
Soil Samples 1⅜ In. Diam. 7 No.
Soil Samples — In. Diam. — No.

Hammer Wt. 140# Boring Started 10 Mar 86
Hammer Drop 30" Boring Completed 10 Mar 86
Casing Left none
Subsurface Water Data — Page 5
Obs. Well no
Drilled By Mark + Kevin Hawkins
Mfg. Des. Drill truck mounted CME 55
Inspected By: TA Beddoe
Classification By: TA Beddoe
Classification By: —

DEPTH 0'	DEPTH 1" = 2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE / CORE RECVY	BLOWS PER FT.	6"SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
		S-1	1⅜	REC 60%	9/13/4/4	3¼" Hollow Stem Auger Sampling by 1⅜" I.D. by 2' long split spoon soil sampler Augering easy for full depth of boring	Brown SILT, little mf SAND, little ORGANIC MATTER, trace of GRAVEL, trace CLAY (wet, slightly plastic) loose MH
2.0'							
5.0'		S-2	1⅜	50%	5/5/5/5		Brown SILT, some GRAVEL, little CLAY, little mf SAND, trace ORGANIC MATTER (wet, plastic) loose MH
7.0'							
10.0'							

GENERAL REMARKS: Boring only 6.3' from centerline of tracks because of inaccessibility of further distances due to precipitous drop off to river.
*Elevations interpolated from Attachment 2 of D.O.

Site: Fort Fairfield, ME.

Boring No. FD-86-8

Page 3 of 5

DEPTH	CORE/SAMPLE NO.	CORE/SAMPLE SIZE	CORE/SAMPLE DEPTH RANGE / REC	BLOWS PER 6" CORE RECOVERY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
10.0' to 12.0'	S-3	1 3/8	REC 90%	1/2/1/4	3 1/4" Hollow Stem Auger Sampling by 1 3/8" I.D. by 2' long split spoon soil sampler. Augering easy for full depth of boring.	Brown fine SAND, some SILT, trace CLAY (wet, slightly plastic) loose SP
12.0' to 15.0'					— Water Table measured at 13.8'	Brown SILT, some fine SAND, trace CLAY (saturated, slightly plastic) loose ML
15.0' to 17.0'	S-4	1 3/8	90%	1/2/1/4		Brown m&c SAND, some SILT (saturated, nonplastic) loose ML interlayered with varved black & brown SILT, trace fine SAND, trace CLAY (saturated, very slightly plastic) loose ML
17.0' to 20.0'						
20.0' to 22.0'	S-5	1 3/8	100%	3/5/6/8		Dark Brown cm& SAND, little SILT (saturated, nonplastic) loose SW
22.0' to 25.0'						
25.0' to 27.0'	S-6	1 3/8	100%	17/18/23/15		Similar Soils
						Brown cm& SAND and CF GRAVEL, some SILT (wet,

58A(Test)

Boring No. FD-86-8

Site	Boring No.	Page
. Fort Fairfield, ME.	FD-86-8	4 of 5

DEPTH		CORE/SAMPLE			BLOWS PER FT.	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
27.0'	1' to 2'	NO.	SIZE	DEPTH RUN / CORE RECOV			
				REC		3¼" Hollow stem Auger Sampling by 1 3/8" I.D. by 2' long split spoon soil sampler Augering easy for full depth of boring.	non-plastic) slightly dense SW
30.0'						end of augering	
		S-7	1 3/8	100%	15/34/33/37		Brown c-m-f SAND, some SILT (wet, non plastic) slightly dense SW
32.0'							Brown c-f GRAVEL, some c-m-f SAND, little SILT (wet, non-plastic) dense GW
						Bottom of hole at 32.0' as instructed in D.O.	

Site: Fort Fairfield ME
Boring No: FD-86-8

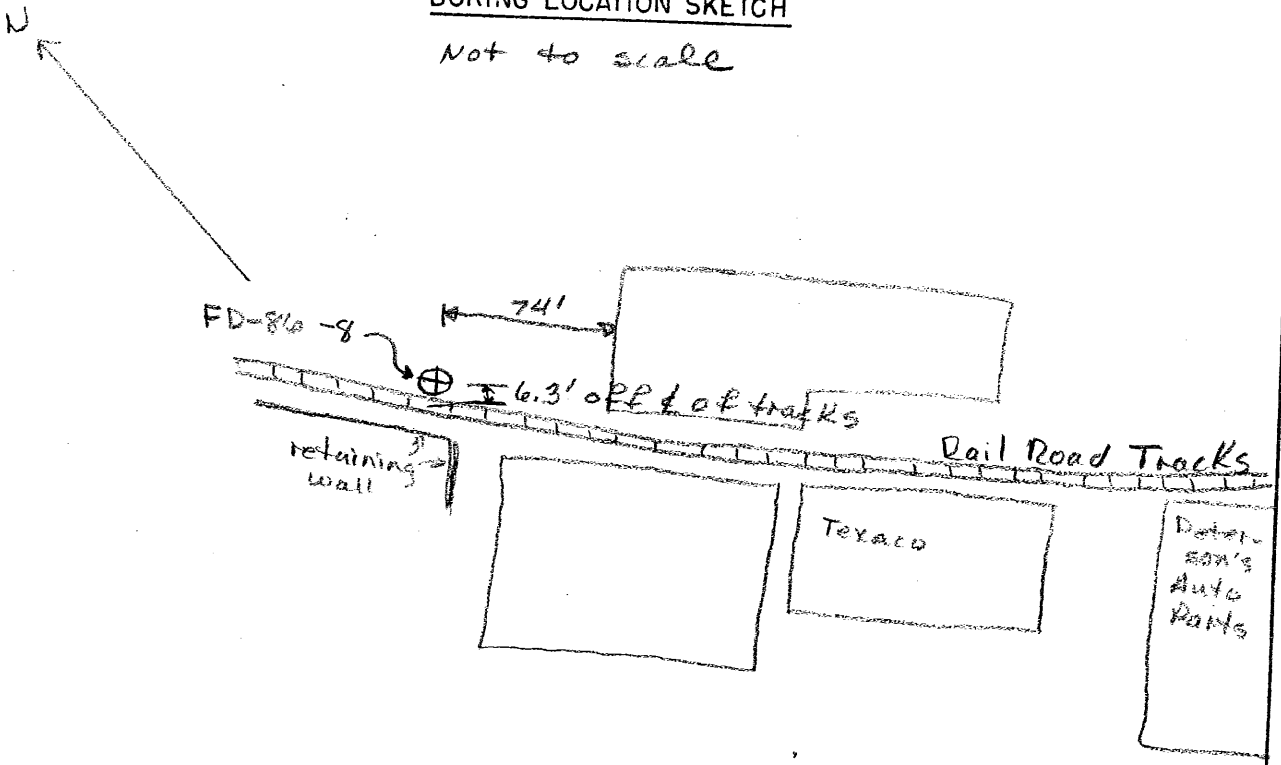
SUBSURFACE WATER OBSERVATIONS

DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER	REMARKS
10 Mar	1400	15.0'	17.0'	13.3'	347.7±'*	measured after
						sample S-4 taken
10 Mar	1600	—	32.0'	13.8'	347.2±'	measured imme-
						diately after
						completion of hole.
		* Elevations interpolated from Attachment 2 of D.O.				

Note: Depths are in feet below original ground

BORING LOCATION SKETCH

Not to scale



FORM 59 (Test)
MAR 71

CORPS OF ENGINEERS, U. S. ARMY
NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

Site Fort Fairfield, ME. PROJECT NO. D.O. #9 Page 1 of 5 Pages

Hole No. FD-86-9 Diam. (Casing) 3¼" Hollow Stem Auger Boring Started 11 March 86

Co-ordinates: ~~N~~ See ~~E~~ Boring location sketch Boring Completed 11 March 86

Drilled by Mark + Kevin Hawkins Report Submitted 18 March 86

Purpose of Exploration determine foundation conditions for dike improvement project

Elevation Top of Hole 363 ± * M.S.L.
Total Overburden Drilled 32 Feet
Elevation Top of Rock — M.S.L.
Elevation Bottom of Hole 331 ± * M.S.L.
Total Rock Drilled — Feet
Total Depth of Hole 32 Feet
Core Recovered — %
Core Recovered — Ft.; — Diam. — In.
Soil Samples 1 3/8 In. Diam. 7 No.
Soil Samples — In. Diam. — No.

Casing Left in Place — Feet

* Elevations interpolated from Attachment 2 of D.O.

Water Table Depth 13.5'

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	30	3¼" I.D. Hollow Stem Auger
30	32	1 3/8" I.D. SPT Sampler

INDEX

Ground Water — ~~Back of~~ Page 5
Boring Location Sketch — ~~Back of~~ Page 5
Overburden Record — Page 2-4
Rock Drilling — Page —
— Page —
— Page —
— Page —

Prepared by T A Beddoe
Field Data — Lab. Data

Submitted by Atlantic Testing Labs, Ltd

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CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site Fort Fairfield, ME. Page 2 of 5 Pages

Boring No. FD-86-9 Desig. E Diam. (Casing) 3¼"

Co-ordinates: N see Boring E Location Plan

Elevation Top of Boring 363± * M.S.L.
Total Overburden Drilled 32 Feet
Elevation Top of Rock — M.S.L.
Total Rock Drilled — Feet
Elevation Bottom of Boring 331± * M.S.L.
Total Depth of Boring 32' Feet
Core Recovered — % No. Boxes —
Core Recovered — Ft : — Diam. — In.
Soil Samples 1 3/8 In. Diam. 7 No.
Soil Samples — In. Diam. — No.

Hammer Wt. 140# Boring Started 6 Mar 86
Hammer Drop 30" Boring Completed 11 Mar 86
Casing Left —
Subsurface Water Data' — Page 5
Obs. Well ND
Drilled By Mark + Kevin Hawkins
Mfg. Des. Drill truck mounted CMESS
Inspected By: TA Beddor
Classification By: TA Beddoe
Classification By: —

DEPTH	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	BLOWS PER FT. / CORE RECVY	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0'					3¼" Hollow Stem Auger Sampling by 1 3/8" I.D. by 2' long split spoon soil sampler. Augering easy for full depth of boring	
1'-2'	S-1	1 3/8	70%	51 / 48 / 50		Brown SILT, some f-c SAND, little f GRAVEL, little CLAY, trace ORGANIC MATTER (grass, roots) (moist, slightly plastic) dense because of frost MH FILL
1.5'						
5.0'						
7.0'	S-2	1 3/8	25%	4 / 3 / 3 / 3		Dark brown SILT, some CLAY, little fine SAND, trace f GRAVEL, trace ORGANIC MATTER (roots) (moist, plastic) slight odor of petroleum product, loose, MH FILL
10.5'						

GENERAL REMARKS:
Boring moved due to water main under requested location.
*Elevations interpolated from Attachment #2 of D.O.

Site	Boring No.	Page
Fort Fairfield, ME.	FD-86-9	3 of 5

DEPTH		CORE/SAMPLE			BLOWS PER 6"	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
10.0'	1st 2'	NO.	SIZE	DEPTH RANGE / REC	CORE REC'VY		
12.0'		S-3	1 3/8	5%	1/1/2/4	3 1/4" Hollow Stem Auger Sampling by 1 3/8" I.D. by 2' long split spoon soil sampler Augering easy for full depth of boring. S-3's poor recovery due to plugging of spoon with large gravel. - Water Table measured at 13.5'	Brown SILT and CLAY, little cmf SAND, trace cf GRAVEL (wet, plastic) loose MH
15.0'							
17.0'		S-4	1 3/8	50%	16/20/21/22		Brown cf GRAVEL and cmf SAND, some SILT with layers of Brown SILT and CLAY, trace fine SAND (wet, nonplastic) slightly dense GW
20.0'							
22.0'		S-5	1 3/8	70%	8/10/14/14		Brown cf GRAVEL and cmf SAND, some SILT (saturated, nonplastic) slightly dense GW
25.0'							
27.0'		S-6	1 3/8	60%	9/20/21/19		Similar Soils GW

Site	Boring No.	Page
Fort Fairfield, ME.	FD-86-9	4 of 5

DEPTH		CORE/SAMPLE			BLOWS PER FT.	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
27.0'	1" = 2'	NO.	SIZE	DEPTH RANGE / REC	CORE RECVY		
				REC		3¼" Hollow Stem Auger sampling by 1⅜" I.D. by 2' long split spoon soil sampler Augering easy for full depth of boring.	
30.0'						end of augering	
		S-7	1⅜	50%	18/22/17/26		Similar Soils GW
32.0'							Brown SILT and CLAY, some mf SAND, trace fine GRAVEL (moist, plastic) slightly dense MH TILL
						Bottom of hole at 32.0' as instructed in D.O.	

Site: Fort Fairfield, ME.
Boring No: FD-86-9

SUBSURFACE WATER OBSERVATIONS

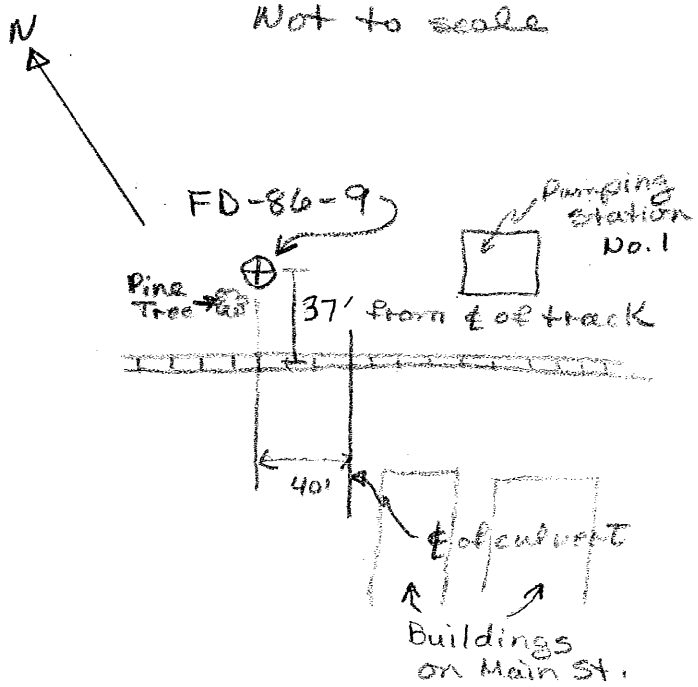
DATE	TIME	DEPTH-BOT. OF CASING	DEPTH-BOT. OF BORING	DEPTH TO WATER	ELEVATION WATER	REMARKS
11 Mar	0935	30.0'	32.0'	13.5'	349.5' *	Boring completed in 2.5 hours, measured immediately after completion of hole

* Elevations interpolated from Attachment 2 of D.O.

Note: Depths are in feet below original ground

BORING LOCATION SKETCH

Not to scale



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NEW ENGLAND DIVISION
FOUNDATION AND MATERIALS BRANCH

FIELD LOG OF TEST BORING

PROJECT NO. D.O. #9

Site Fort Fairfield, ME. Page 1 of 4 Pages

Hole No. FD-86-10 Diam. (Casing) 3¼" Hollow Stem Auger Boring Started 11 March 86

Co-ordinates: N see boring location sketch Boring Completed 11 March 86

Drilled by Mark + Kevin Hawkins Report Submitted 18 March 86

Purpose of Exploration determine foundation conditions for dike improvement project

Elevation Top of Hole 361 ± * M.S.L.
Total Overburden Drilled 22 Feet
Elevation Top of Rock — M.S.L.
Elevation Bottom of Hole 339 ± * M.S.L.
Total Rock Drilled — Feet
Total Depth of Hole 22 Feet
Core Recovered — %
Core Recovered — Ft.; — Diam. — In.
Soil Samples 1 3/8 In. Diam. 5 No.
Soil Samples — In. Diam. — No.

Casing Left in Place — Feet

* Elevations interpolated from Attachment 2 of D.O.

Water Table Depth 12.8'

Depth From	Depth To	Method of Drilling and Type of Bit Used
0	20	3¼" ID Hollow Stem Auger
20	22	1 3/8" ID SPT Sampler

INDEX

Ground Water — ~~Back of~~ Page 4
Boring Location Sketch — ~~Back of~~ Page 4
Overburden Record — Page 2+3
Rock Drilling — Page —
— Page —
— Page —
— Page —

Prepared by TA Beddoe
Field Data — Lab. Data

Submitted by Atlantic Testing Labs, Ltd.

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REPLACES EDITION OF JUN 51 WHICH MAY BE USED UNTIL EXHAUSTED

U. S. ARMY
CORPS OF ENGINEERS
NEW ENGLAND DIVISION

FIELD LOG OF TEST BORING

Site Fort Fairfield, ME. Page 2 of 4 Pages

Boring No. FD-86-10 Desig. G Diam. (Casing) 3¼"

Co-ordinates: ☒ see Boring ☒ Location Sketch

Elevation Top of Boring 361± * M.S.L. Hammer Wt. 140# Boring Started 11 Mar 86

Total Overburden Drilled 22 Feet Hammer Drop 30" Boring Completed 11 Mar 86

Elevation Top of Rock — M.S.L. Casing Left —

Total Rock Drilled — Feet Subsurface Water Data' — Page 4

Elevation Bottom of Boring 339± * M.S.L. Obs. Well no

Total Depth of Boring 22 Feet Drilled By Mark + Kevin Hawkins

Core Recovered — % No. Boxes — Mfg. Des. Drill Truck mounted CME 55

Core Recovered — Ft : — Diam. — In. Inspected By: TA Beddoe

Soil Samples 1 3/8 In. Diam. 5 No. Classification By: TA Beddoe

Soil Samples — In. Diam. — No. Classification By: —

DEPTH 1" = 2'	CORE/SAMPLE NO.	SIZE	DEPTH RANGE	CORE RECVY	BLOWS PER FT.	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
0.0'						3¼" Hollow Stem Auger Sampling by 1 3/8" I.D. by 2' long split spoon soil sampler Augering easy for full depth of boring	
	S-1	1 3/8	REC	80%	25/50/44/42		Black SILT and cmf SAND, little f GRAVEL, trace ORGANIC MATTER (wet, nonplastic) dense due to frost, ML FILL
2.0'							
5.0'							
	S-2	1 3/8		80%	9/16/14/17		Brown mf SAND, little cf GRAVEL, trace SILT (moist, nonplastic) slightly dense SP
7.0'							
10.0'							

GENERAL REMARKS:
*Elevations interpolated from Attachment 2 of D.O.
Boring moved due to difficulty of fine adjustments to rig position because of rails and snow.

Site	Boring No.	Page
Fort Fairfield, ME.	FD-86-10	3 of 4

DEPTH		CORE/SAMPLE			BLOWS PER 6"	6" SAMPLING AND CORING OPERATIONS	CLASSIFICATION OF MATERIALS
10.0'	1' to 2'	NO.	SIZE	DEPTH RANGE / REC	CORE RECVY		
12.0'		S-3	1 3/8	12 Ec 35%	10 / 15 / 17 / 20	3 1/4" Hollow Stem Auger - Sampling by 1 3/8" I.D. by 2' long split spoon soil sampler - Augering easy for full depth of boring - Water Table measured at 12.8'	Brown m-f SAND, some c-f GRAVEL, little SILT (wet, nonplastic) slightly dense SP
15.0'							
17.0'		S-4	1 3/8	75%	20 / 30 / 28 / 37		Brown c-f GRAVEL, some c-m-f SAND, little SILT (wet, nonplastic) fairly dense GW
20.0'						end of augering	
22.0'		S-5	1 3/8	85%	13 / 29 / 32 / 35		Brown c-m-f SAND, some SILT, little c-f GRAVEL; with some pure inorganic SILT layers (saturated, nonplastic) fairly dense SW
						Bottom of hole at 22.0' as instructed in D.O.	